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TOURISM DEVELOPMENT
IN
ONTARIO NORTH OF 50°

Volume Four

The Heritage Resource Supply Foundations

Volume Five

The Climate Supply Foundations

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THE ROYAL COMMISSION ON THE NORTHERN ENVIRONMENT
1984



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Royal Commission on the Northern Environment

From the Office of
the Commissioner

PREFACE

Relationship of Tourism to the Commission's Mandate

The mandate of the Royal Commission on the Northern Environment directs me to make recommendations concerning both the manner in which the development of major enterprises takes place in Ontario North of 50° and the means whereby decisions to undertake such enterprises are reached. Hence this Commission's program has been governed by my two overriding concerns. One is to find ways of ensuring that development, when it occurs, proceeds in an orderly fashion, working in concert with and not at the expense of the environment. The other is to explore various means of ensuring that northerners are involved effectively in decision-making on issues that affect them.

I regard tourism as a major enterprise having far-reaching implications for social and economic development, resource allocation and management, and environmental protection in all parts of Ontario North of 50°. And, for several reasons, I consider it to be a particularly appropriate enterprise for native people living in communities beyond the reach of the present network of all-season roads. The tourism sector clearly offers attractive opportunities for new development in the far north, with prospects for generating substantial income and employment for the people living there as well as benefits to the province as a whole. Tourist activities consume resources but need not deplete the basic stock of renewable biological resources on which they mainly depend provided that these resources are managed according to sound sustained-yield practices. Moreover, I am convinced that implementation of multiple-use resource allocation and management principles would permit tourist operations to co-exist over the long term with traditional, community-based trapping, hunting and fishing activities.

Native people and others living in Ontario North of 50° are understandably apprehensive that tourism could develop without adequate sensitivity to their circumstances and interests — that most of the economic benefits would leak outside the region while the adverse social and cultural impacts would be borne within it.

This must not happen, and need not. I believe that the kind of development that does occur must take advantage of the residents' existing economic and cultural relationships with their natural environment, secure a flow of benefits into their communities, and involve them fully in all aspects of planning, decision-making and facility operation.

Objectives and Scope of the Study

The Commission undertook this study of tourism prospects for Ontario North of 50° in order to obtain an assessment of the opportunities available, a set of realistic alternatives for tourism development, and a view of tourism's place in the spectrum of competing demands for the region's natural resources.

Since specialized wilderness resource-based tourism, encompassing hunting, angling, camping and travel, is clearly the most appropriate type for the greater part of Ontario North of 50°, the Commission's terms of reference for the study accorded it priority. Issues of general tourism and outdoor recreation were to be dealt with also, but only to the extent that they are manifest north of 50° or are likely to impinge on wilderness tourism there.

Implications for Further Action

The production of a development plan for the tourism sector is sorely needed but beyond the scope of my Commission. However, I am pleased to find that the study has an essentially practical orientation that will help others to draw up proposals that can be implemented, since it evaluates alternative policies and strategies for the allocation and management of renewable and terrain resources, for tourist market exploitation, for investment in tourist facilities and maintenance and management of them, and for attainment of local income and employment impact.

This study forms a crucial part of this Commission's research. I am relying on its findings, as well as on public submissions on tourism matters, in formulating my final recommendations. The reports on various aspects of tourism development will undoubtedly prove useful to those having responsibilities for planning and decision-making in the tourism field and can serve as a major source of information for participation by interest groups and the public generally in the planning and decision-making processes.



J. E. J. Fahlgren,
Commissioner

ACKNOWLEDGEMENTS

The author wishes to acknowledge the guidance given by Ian Fraser, Director of Research for the Royal Commission on the Northern Environment, on matters of scope, approach, methodology and review. The Commission kindly arranged for the production of this report and the maps. The editorial contribution made by Faye Rodgers, Research Officer with the Commission, was invaluable.

This publication has been prepared for the Royal Commission on the Northern Environment. However, no opinions, positions or recommendations expressed herein should be attributed to the Commission: they are those solely of the author.

Volume Four

The Heritage Resource Supply Foundations

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INTRODUCTION

This volume on *The Heritage Resource Supply Foundations* is one of a set of five presenting the results of the study of *Tourism Development in Ontario North of 50°* undertaken for the Royal Commission on the Northern Environment. The terms of reference for the study established three main objectives:

- 1) to assess the magnitude and socio-economic significance of development opportunities for wilderness-based tourism in the region;
- 2) to design a set of alternative policies and strategies to ensure that prospective local entrepreneurs are placed in a position to effectively exploit and benefit from these opportunities, and
- 3) to evaluate the future role of tourism within the context of increasing general development pressures and their associated economic, social and natural environmental consequences for people and resource uses in the region.

Four of the five volumes, including this one, present detailed technical information and evaluations for four components of the tourism field: the climatic resource foundations, the heritage resource foundations, transportation infrastructure, and tourist facility development. The fifth volume, *Issues and Policy Options*, summarizes the main issues confronting the development of tourism in Ontario North of 50° and identifies and evaluates the range of policy and strategy alternatives for resolving them. It represents a synthesis of the perspectives and insights gained during the course of the research.

The four detailed technical reports on components of the tourism field have a common four-part format. The first part, *Pattern*, describes and evaluates each component in relation to tourism development, adopting historic, current and future time perspectives as appropriate.

The second part, *Major Implications for Tourism Planning, Development, and Operation*, examines the implications of pattern in terms of opportunities and constraints facing government agencies, private entrepreneurs and researchers involved in investment and management planning and development and operational decision-making in the particular component of the tourism field under consideration.

The discussion in the third part, *Issues*, can serve as a basis for informed decision-making regarding the component and constitutes input for the volume on *Issues and Policy Options*.

The fourth part, *Support Documentation*, consists of three main sections. The first, *Related Agencies, Programs, and Information Output*, discusses the activities of agencies having functions related to the component and their interface with the tourism sector, and thereby provides useful information for those involved in the planning, development and operation of tourist facilities, particularly native communities and private entrepreneurs who may not be familiar with the research and decision-making structures of government for the component. The second, *Contacts Made in Course of Study*, lists the people who have contributed in an important way to this study and who may be useful to others in the future. The third, *References*, identifies the documents that were consulted during the course of the study.

PATTERN

The components of heritage resources forming an integral part of the supply foundations for tourism are readily identifiable, and include Indian rock paintings and prehistoric and historic sites and structures, marker programs and museum developments. Each is discussed individually although the interrelated nature of the grouping should be recognized.

PREHISTORIC CULTURAL SITES AND ARTIFACTS

The treatment of the subject is highly selective and intended solely to provide the minimum basic description considered sufficient for an appreciation of the resource as an integral component of the supply foundations for tourism in Ontario North of 50°. Initially, a brief summation of general cultural patterns and relationships is presented. This is followed by a summary statement of site distribution. The accompanying map reflects the spatial focus of field research in recent years in Ontario North of 50°. There are undoubtedly thousands of undiscovered sites in and around settlements and along every major prehistoric water highway system. In the recent West Patricia Archaeological Project, a sub-component of the West Patricia Land Use Plan, close to 1000 new sites were discovered and the range of the Palaeo-Indian culture was extended farther north than previously thought to be the case.

No attempt is made to distinguish individual sites, but rather to identify general areas of site concentration. Secondly, the sites are not distinguished on a time period or cultural basis. Frequently sites contain artifacts from several cultural periods, especially those at superb fishing and hunting locations.

Major Cultural Periods

Four major cultural periods and several associated traditions are recognized in the 9000 years of prehistoric occupation in northern Ontario as a whole. Three of the periods, including Archaic, Middle and Late Woodland together covering about 7000 years, were distributed widely across Ontario North of 50°. Insofar as can be determined from present investigations, the earliest Palaeo-Indian culture barely penetrated that far north.

On the basis of present knowledge it would appear that prehistoric cultures were not uniformly distributed over Ontario North of 50°. Palaeo-Indian cultures apparently penetrated no farther north

CHART 1

PREHISTORIC CULTURAL PERIODS AND ASSOCIATED
CHARACTERISTICS IN ONTARIO NORTH OF 50°

Cultural Periods and Traditions	Time	Events and Characteristics of Interest
<u>Palaeo-Indian Period</u>	6000BC-5000BC	<ul style="list-style-type: none"> - Glacial ice fronted by glacial Lakes Agassiz and Minong (in Lake Superior Basin) covered Ontario North of 50° - Lac Seul area most northerly known location of sites - Hunted caribou with spears
<u>Archaic Period</u>	5000BC-500BC	<ul style="list-style-type: none"> - Rapid spread of people and, by middle of period, all across northern Ontario including North of 50° - Bow and arrow introduced about 1600 BC - Roots of a fishing technology established including harpoons. Bait fishing and fish traps used for river sturgeon and suckers - Copper used as raw material for tools - Assumed to have had canoes or boats because campsites on islands
<u>Old Copper Culture</u>		
<u>Middle or Initial</u>	400BC-	<ul style="list-style-type: none"> - Small encampments for extended families of 25 people in one or two oval lodges, but large villages appear at some points (Sault Ste. Marie, La Cloche, Lake Superior Provincial Park), all to the south of Ontario North of 50° - Pottery was used for the first time - Seine fishing began in shallow water areas
<u>Woodland Period</u>	900AD	
<u>Laurel Tradition</u>		

CHART 1 (Continued)

Cultural Periods and Traditions	Time	Events and Characteristics of Interest
		<ul style="list-style-type: none"> - Extensive trade networks from the Atlantic to the western plains developed using the routes to be followed by fur traders 1000 years later
<u>Late or Terminal</u>	800AD-1700AD	<ul style="list-style-type: none"> - Wild rice became a food staple and laid foundation for population increase
<u>Woodland Period</u>		<ul style="list-style-type: none"> - Developed a specialized adaptation to northern Ontario seasonal cycle of food resources. Main sites were concentrated at spring and fall hunting and fishing grounds - Gill net fishing in deep water began - Rock paintings on cliffs spread across the north - By the 15th century a well-organized trade developed between Ojibway in northeastern Ontario and the Huron and Ottawa to the south

Source: References [7], [8], [19], [20]

than the Lac Seul district. From about 900 to 1700 the Blackduck and Selkirk traditions of the Late or Terminal Woodland period appear to have occurred simultaneously in northwestern Ontario. The entire area did not necessarily, and in fact probably did not, experience the complete sequence of cultures. In effect, the prehistoric people in some places probably moved directly from an early to a later culture, skipping an intervening tradition.

The time periods shown in the foregoing outline are simply broad approximations for northern Ontario as a whole. In the more northerly interior part of the study area, cultures and traditions may have arrived somewhat later or lingered considerably longer.

Palaeo-Indian Cultural Period 6000 BC - 5000 BC

Following the retreat of the Wisconsin continental glacier to the north of the upper Great Lakes about 9500 BC, the peoples of the Palaeo-Indian cultural period moved from the south and west into a tundra and parkland environment where caribou were abundant. As late as 7500 BC most of Ontario North of 50° was still covered with ice. Large glacial Lakes Abitibi, Agassiz and Minong occupied the Lake Superior Basin fronting the ice sheet.

The culture apparently reached the Thunder Bay area by about 7000 B.C. Archaeological field research undertaken through the West Patricia Archaeological Project revealed sites associated with this cultural period in the Lac Seul area and in the area to the east about 160 kilometers north of Lake Superior. As previously noted, this represented a considerable extension of the northern limits of the range of the culture. On the basis of present knowledge, however, it appears that the distribution of Palaeo-Indian cultural sites barely penetrated Ontario North of 50°. Moreover, the sites are mainly the remains of campsites (bone, fire rings, etc.) that have no visual impact from a tourism development standpoint.

Archaic Cultural Period 5000 BC - 500 BC

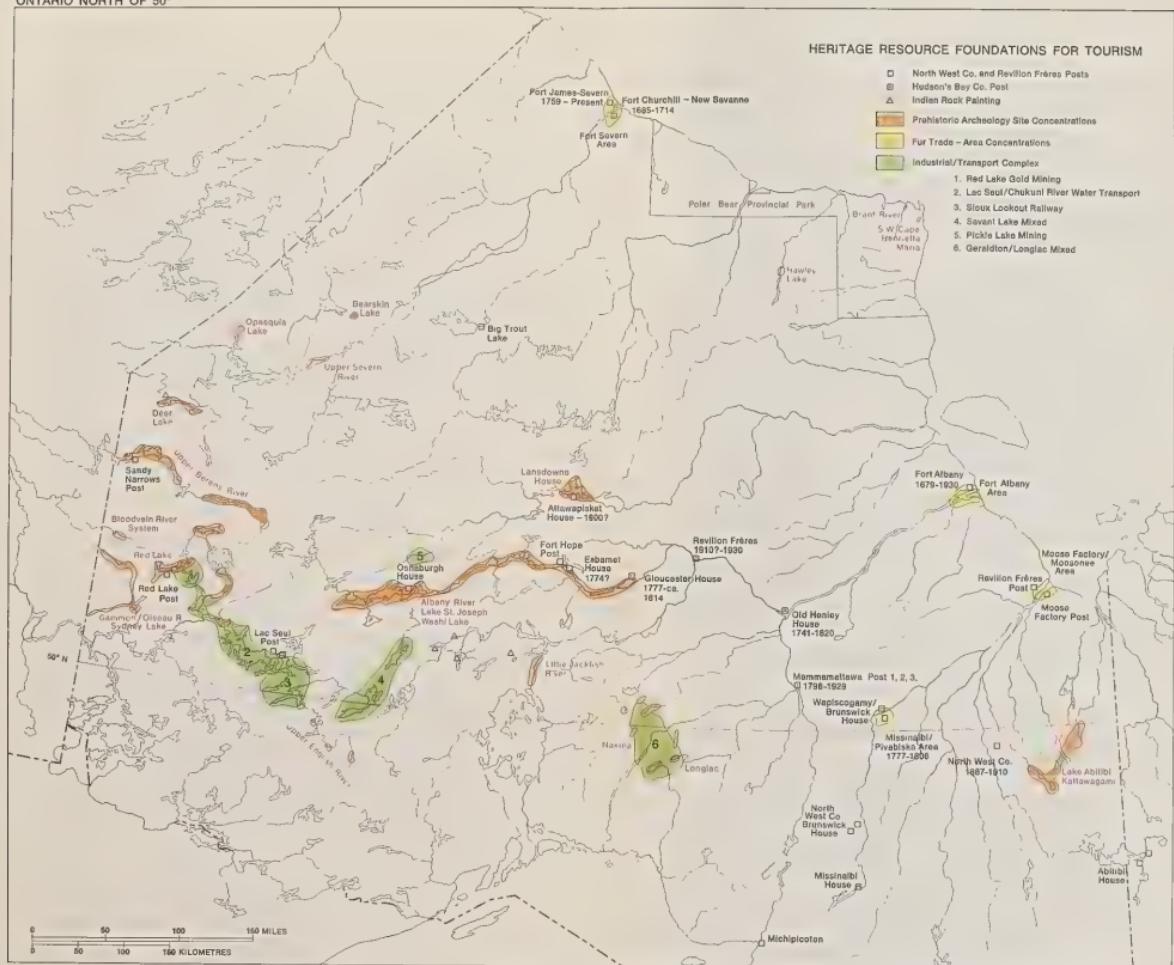
A warmer and drier climate resulting in major changes in the distribution of large game and plant communities ushered in the longest of the cultural periods, lasting about 4500 years. In northern Ontario, two Archaic traditions are recognized, largely on the basis of arrowhead design. These include the Shield Archaic that appears to be descended from the Plano peoples indigenous to the Boreal forests and the Plains Archaic brought by the people who entered the southwestern portions of the area as the prairie grasslands spread eastward and northward from Manitoba and Minnesota. It is the Shield Archaic tradition that is encountered in Ontario North of 50°, although some influence of the Plains may be detected in the southwest portions.

The Shield Archaic tradition represented a successful adaptation to the cyclical nature of the food resource that involved a repetitive pattern of lakeshore fishing and interior Boreal forest living within prescribed territories. The bow and arrow was introduced. The roots of a fishing technology were laid down in this period including bait and trap fishing for river suckers and sturgeon. Since campsites of these peoples have been found on islands, it is assumed that they had canoes or dugout boats. Local native copper deposits discovered around Lake Superior were fashioned into a wide variety of tools so that the period is sometimes termed the "age of copper".

Early Woodland Cultural Period

The Early Woodland culture that appeared in southern Ontario and the lower Great Lakes is not represented in northern Ontario.

HERITAGE RESOURCE FOUNDATIONS FOR TOURISM



Middle or Initial Woodland Cultural Period 400 BC - 900 AD

In northern Ontario two traditions in this cultural period are recognized including the La Cloche and the Laurel. In Ontario North of 50° only the latter occurred and it is widespread.

The origin of the culture and its traditions are in dispute. Some feel that it was a direct development from the Archaic base culture in the area and differed only in terms of the introduction of pottery. Others suggest that in northwest Ontario it was the northern extension of the Hopewell culture of the Mississippi valley to the south that is characterized by huge burial mounds.

The use of clay pottery to cook and store food was the novel trait of this cultural period. Seine net fishing in shallow water was developed. Over much of the area the people lived in oval lodges in small encampments comprised of about 25 members of the extended family. At some points to the south of Ontario North of 50°, including Sault Ste. Marie, La Cloche and Lake Superior Provincial Park, larger permanent settlements developed. The small family groups in the western parts of northern Ontario apparently came together, perhaps annually, in groups of 200 to 400 for communal events including the ceremony for the dead. Huge burial mounds were built in the Rainy River area.

Extensive trade networks reaching from the Atlantic seacoast to the Rocky Mountains were established in this period using the east to west waterways of the fur trade period a thousand years later. Trade and cultural influences also moved northward up the Mississippi waterways into northwestern Ontario.

Late or Terminal Woodland Cultural Period 800 AD - 1700 AD

About 800 AD the climate became warmer and moister and hence conducive to the spread of wild rice, providing a foundation for a substantial population increase. People continued to live in oval lodges, the forerunner of the wigwam. Deep-water fishing using gill nets was developed and pictographs likely originated in this cultural period.

A specialized adaptation to the seasonal cycle of food was developed. Apparently small family groups of 30 to 40 hunted, fished and foraged through the forest-lands along established circular routes. The remains of their short-term campsites scattered across the landscape are not of significance from a tourism development standpoint. The groups gathered together as a band at the spring spawning grounds of fish and the fall bird-hunting and rice-gathering areas. Here extensive and more substantial structures of a permanent or a semi-permanent nature appeared. Excavated, reconstructed, and interpreted, these spring and fall gathering points might have tourist appeal in some cases.



Plate 1: Reconstructed Cree clay pot about 500 years old, found on the Berens River. (Source: Ministry of Citizenship and Culture.)

It appears that an extensive trade was developed towards the end of this cultural period between the Ojibway and the Hurons to the south. A similar trade with southern Ontario, the plains and Michigan may have developed in the Nipigon area and the adjacent central Lake Superior region.

Two traditions are recognized on the basis of differences in pottery decoration, namely the Selkirk and the Blackduck. The former is generally considered to be the ancestral forerunner of the Cree. The ethnic relationship of the Blackduck is highly controversial. Some feel it is prehistoric Assinaboine, others Algonkian. At the present time, insufficient knowledge exists to determine the true relationship.

Major Site Concentrations

The distribution of prehistoric archaeological resources in Ontario North of 50° is shown on the accompanying map in site concentrations rather than by specific sites. Each major site concentration is keyed to the brief text description that follows.

Some important limitations require note. The concentrations mapped reflect only the content of the source documents reviewed and should not be interpreted as an exhaustive catalogue. Numerous isolated sites noted in various government and academic files and papers are not indicated. The concentrations in the western portions of Ontario North of 50° are an indication of the results of recent field investigations of the West Patricia Archaeological Project, not a reflection of a true distributional pattern but rather of the focus of research to date.

(1) Little Abitibi/Kattawagami Concentration

This series of sites between Little Abitibi, Detour and Kattawagami Lakes includes prehistoric Indian campsites and historic Indian cemeteries extending slightly above 50° North.

(2) Polar Bear Provincial Park Concentrations

(a) Brant River Sites

Two native campsites were excavated in 1971. One modern period site contained the foundation remains of tents, sod-covered conical lodges, stone tent rings and sod quarries. The second site dates from prehistoric times.

(b) Sites Southwest of Cape Henrietta Maria

Six pits, representing aboriginal subterranean caches for woodland caribou in the late prehistoric or early historic Cree period, were excavated in 1974.

(3) Hawley Lake Concentration

In 1973 and 1974, 14 sites were located in Hawley Lake and two eight kilometers downstream. Two sites were modern or post-1900. Fourteen were considered to represent a late regional phase of the Shield Archaic tradition about 900 AD. The usual bone, lithic and ceramic materials were uncovered.

(4) Bearskin Lake Concentration

Sites differentiated by cultures were discovered here.

(5) Upper Severn River/Opasquia Lake Concentration

Nine sites of the prehistoric and historic cultural periods were identified here by the West Patricia inventory. The precise cultural affiliations of some of the sites remain unknown.

(6) Deer Lake Concentration

In 1979, two prehistoric sites of Laurel and Late Woodland occupation were unearthed here, and several pictographs examined.

(7) Upper Berens River System Concentration

Along the upper Berens River, 41 sites of the Archaic cultural period and the Blackduck and Selkirk traditions were found here together with some of the historic period. In addition, four pictographs were discovered.

(8) Trout Lake Drainage System Concentration

Five prehistoric and four historic sites were identified in this concentration near Red Lake. It would appear from evidence to date that the Trout Lake drainage system was not a major waterway in prehistoric or historic times.

(9) Red Lake Concentration

In 1979, 13 sites comprising Archaic, Laurel and Blackduck prehistoric, historic fur trade and recent historic components were examined. Ceramic, lithic and faunal bone fragments were uncovered in the prehistoric sites.

(10) Telescope Lake to Pipestone Bay/Red Lake Concentration

Twenty-five archaeological sites were discovered here. Many did not contain diagnostic artifacts for assignment to precise cultural periods.

(11) Bloodvein River System (Larus to Sabourin Lakes) Concentration

There are 19 known sites here, 14 of which were uncovered in the West Patricia survey. The other five were previously recorded pictographs. The precise cultural affiliation of some sites remains unknown but most are of the Late Woodland period and one is a historic period fur trade post.

(12) Gammon River, Oiseau River, Sydney Lake Concentration

Thirty-eight sites were recorded in this area by the West Patricia survey. Some were associated with the Archaic, Blackduck and Laurel cultural periods and traditions. Some were of an unknown prehistoric period. Many sites had modern campsites located above them.

(13) Upper English River Concentration

Sixteen sites on Selwyn, Mattawa and Press Lakes and at Talking Falls and English River Falls were identified in 1979. Archaic, Laurel and Blackduck artifacts were unearthed. All occur somewhat south of 50° North.

(14) Albany River, Lake St. Joseph to Washi Lake Concentration

In the summer field seasons of 1978 and 1979, a total of 94 sites associated with the prehistoric and historic cultural periods

were investigated. The usual lithic, ceramic and bone fragments of the Archaic and the Initial and Terminal Woodland periods were found. Sites of the historic period yielded typical component material. Clearly, the Albany River has been a major water travel corridor since prehistoric times. There is no evidence, however, of Palaeo-Indian cultural penetration.

(15) Lansdowne House Concentration

Fifty-four sites were discovered here ranging from Archaic to historic in their cultural period affiliations.

(16) Little Jackfish River Concentration

About 20 sites were discovered here in a study completed for Ontario Hydro.

(17) Nakina/Longlac Concentration

Twenty-three sites on Fleming, Constance and the Upper and Lower Twin Lakes with Archaic, Initial and Terminal Woodland components are contained in this concentration. Lithic, ceramic and bone fragments were discovered together with miscellaneous metal and hardware remains of the historic period. All are located just north of the 50th parallel. Thirty-six sites of similar cultural periods were recorded around Burrows Lake just south of this parallel.

Indian Rock Paintings or Pictographs

The largest concentration of Indian rock paintings or pictographs in Canada, probably in North America, occurs in northwestern Ontario, and the majority are in the area North of 50°. On the accompanying map of heritage resources only a few of the major recorded concentrations are indicated. The major grouping of 18 sites at Cliff Lake represents the densest assemblage discovered to date. The eight sites investigated at Deer Lake in 1979 are among the most northerly recorded in Ontario.

Actually the sites are scattered across a host of locations in the western portions of Ontario North of 50°. Many have been reported by wilderness travellers and sportsmen but there has not been time or funds to have them checked by experts. In effect, no comprehensive inventory program has been undertaken to the present.

Absolute dating techniques have not yet been developed for Indian pictographs. Some may date back 1000 years or more to the Blackduck and Selkirk cultural periods. Others are clearly of the historical period following European contact since they depict such items as the horse and the rifle. Actually, Indians practice rock art to this day but the modern paints used will not survive for much more than 30 or 40 years. The originators of the art form apparently used red ochre (hematite) mixed with sturgeon fish oil that served as glue. Their work has survived for 500 years or perhaps even longer.

The meaning of the rock art remains a mystery to archaeologists. The abstract styles and symbolic nature of many of the morphs are extremely difficult to interpret, particularly when they are the artistic creation of people living centuries ago. Some probably have a religious significance.

From a tourism standpoint, the pictographs have considerable visual appeal. Those situated on well-travelled routes certainly justify a site interpretation program. The remarkable concentration at Cliff Lake that is accessible only by plane or boat could, if properly promoted and interpreted, be an important tourist attraction in its own right. It probably would have a specialized market prepared to pay the cost of access by charter plane.

The fact that the pictographs are susceptible to damage and cannot be easily protected represents a major problem. The paint surface can be quickly damaged by handling. Vandals have sprayed some with paint and "shot up" others. It appears also that Indians sometimes "retouch" the paintings or have done so in the past.

At the present time tourist sport camp operators are functioning as site wardens or guardians of a sort. They distribute booklets prepared by the Ministry of Citizenship and Culture to guests informing them of the significance of the sites and their fragile nature. They usually report any new sites that they discover.

HISTORIC ARCHAEOLOGICAL SITES AND STRUCTURES

The central focus of the discussion is on the fur trade theme. It is recognized, however, that there are a number of heritage resources associated with industrial development and transportation themes that are of local, regional, provincial and perhaps even national significance that could have considerable tourist appeal when presented in an attractive manner.

Fur Trade Posts and Fortifications

Treatment of this topic is admittedly uneven in that those resources that have been investigated and well-documented in recent years receive the most attention. Some historic areas such as Fort Albany are dealt with in a rather perfunctory manner due to limited readily available information. This should not be interpreted as an indication of limited resource potentials.

The Fort Severn Trade Posts and Fortification Complex

From the standpoints of both scientific historic interest and possible support features for local tourism promotion and development, the general history and archaeological remains of the Fort Severn settlement area are of major consequence. Two important themes are

represented here, including the period of French/English conflict in North America and the fur trade and associated trading post development. There is an almost continuous 300-year history of occupation at Fort Severn dating from 1685 to the present.

Two distinct historic archaeological resource areas have been identified. One, located on the south bank of the river about five kilometers upstream from the modern settlement, can be characterized as a complex of buildings and fortifications dating from the period of French/English occupation and conflict between 1685 and 1713. The second, located on the south bank of the modern settlement of Fort Severn on and around the present Hudson's Bay post, is representative of the fur trade era from the close of the Seven Years' War in North America in 1759 to modern times.

(a) Upstream Fort Churchill and Nieu Savanne - 1685 to 1714

Discovered in 1631 by both Captains Thomas James and Luke Foxe of the Royal Navy in their search of Hudson and James Bays for the Northwest Passage, the Severn River appears to have been neglected until rediscovered by Governor Bayley of the Hudson's Bay Company in 1674. In 1679, on a still undetermined site, a Hudson's Bay post was built on the north bank of the Severn River only to be destroyed by the French in 1783.

In 1685, possibly at the excavated site on the south bank of the river five kilometers upstream from present-day Fort Severn, a log palisade fort and trading post with stone foundations and four gun bastions was constructed by the Hudson's Bay Company and named Fort Churchill. Moving overland using the Ottawa and Abitibi Rivers, the French, under the command of Le Chevalier Pierre de Troyes, accompanied by the famous Pierre Le Moyne Sieur d'Iberville, captured all posts of the Hudson's Bay Company in the bay area except the northern Forts Churchill and Nelson. In 1690 when the French under the command of Pierre Le Moyne Sieur d'Iberville again threatened Fort Churchill, its master, Thomas Walsh, burned the structures to prevent capture. In 1691 the French constructed a post called Nieu Savanne, possibly on the north bank of the Severn River. The fort was captured by the English in 1693 and recaptured by the French in 1694. In 1700 the French rebuilt Nieu Savanne, at that time only a little house on the south bank, and abandoned it in 1704. By the Treaty of Utrecht in 1713, rights to the posts of the bay were surrendered to the English and Nieu Savanne was used in 1714 by the Hudson's Bay Company before they abandoned it. Apparently there were no posts in the Severn River basin until 1759, when the Hudson's Bay Company built Fort James on the site of the present settlement.

The excavation on the south bank five kilometers upstream from present-day Fort Severn has revealed a complex of buildings and defence structures. The stone foundations of wooden palisades and the four corner bastions have been uncovered. Of 141 artifacts obtained in 1976, building materials (buff and red brick, English-manufactured red floor tiles, a possible iron hinge) and weapons (gun flints and musket balls) dominate.

It has not yet been established whether the excavated fort is of French or English origin. Perhaps both used the structures at various times. Materials certainly were pirated over the years by the French, English and Indians for building purposes. In recent years, moreover, collectors and amateur archaeologists have looted the site to an unknown extent.

(b) Post-1759 Fort Severn Structures

In 1759 the Hudson's Bay Company built Fort James on the site of present-day Fort Severn, marking the return of the physical presence of the Bay to the lower Severn River basin after 44 years' absence. Beginning as a log tent camp followed by a temporary house in 1760, the permanent building was erected in a flank system using bricks, many of which came from the old fort five kilometers upstream. The master described the fort in 1772 as a compact building with four bastions, eight cannon, stores and a complement of 18 men. In 1782 free Canadian traders under La Perouse captured and destroyed the fort. It was rebuilt by the Bay the following year. In the early 1800's many explorers of the interior areas set out from Fort Severn. Plans of the layout of Fort Severn in 1823 are available and show a palisade of 89 meters, a factor's house, trading store and kitchen, provision store, schooner storehouse, ration and miscellaneous storehouses and a substantial garden area. Burned to the ground in 1827, the fort was rebuilt in 1831. In 1876 the first Roman Catholic church was erected at Fort Severn.

In 1975 the area in front of the present Hudson's Bay store that stands on a mound, possibly representing the remains of the old post, was investigated. The area, which had been severely disturbed, was examined from a riverbank profile, excavations being made. French and English bricks, French gunflints, clay pipe stems with spur heels, bottle shards, trade beads, nails, bone fragments and leather and cloth remains were among the artifacts obtained.

Taken in combination, the historic resources of the Fort Severn area are substantial. From a tourism standpoint the theographics (French/English conflict and early fur trade/exploration) are colourful. The remains at the Fort

Churchill/Nieu Savanne site have substantial visual attractivity as they now appear and could be further enhanced with a relatively modest interpretation program. Next to Moosonee/Moose Factory, this may be the most important historic site on the Hudson Bay and James Bay coasts from the standpoint of tourism development potential.

The Fort Albany Area

There is a rich and lengthy history associated with this settlement, which contains archaeological remains and standing structures of Indian villages, burial sites, fortifications, Hudson's Bay Company posts beginning about 1675, and Roman Catholic Church buildings. Archaeological work has been done in this area by Dr. Walter Kenyon of the Royal Ontario Museum. In an immediate sense, the value of the potential is enhanced by the fact that Fort Albany is relatively close to the tourism development zone at Moosonee/Moose Factory that now receives a substantial volume of visitors via the Polar Bear Express.

The Moose River Drainage Basin

The Moose-Missinaibi River system occupied a cardinal position in the fur trade history of northeastern Ontario. From their centres at Michipicoten on Lake Superior, the French (following the explorations of La Vérendrye) and the Northwest Company (after the conquest) battled the Hudson's Bay Company from its centre at Moose Factory for control of the fur trade of northeastern Ontario. The waterway became the artery of the Hudson Bay's Company in northeastern Ontario. Provisions brought to Moose Factory from England, or manufactured at that post, were shipped through to Michipicoten and thence to Sault Ste. Marie while, in return, furs were moved to the Bay for export. This transportation system continued until 1863, when the Lake Superior District of the Hudson's Bay Company was transferred to Montreal and an east/west transport system was established that was reinforced by the railway two decades later.

Under intense competition from the Northwest Company operating from its base post at Michipicoten, the Hudson's Bay Company began to move its trading inland in 1770 into the upper Moose/Missinaibi and Abitibi Rivers. The primary geographical focus of the ensuing struggle was well south of 50° North, in the area of New Brunswick and Missinaibi Houses on Brunswick and Missinaibi Lakes respectively.

The Missinaibi River/Pivabiska Creek Area

Wapiscogamy House, situated on the west bank of the Missinaibi River about eight kilometers upriver from Pivabiska Creek, formerly called Wapiscogamy Creek, was established in the winter of 1776-1777 by the Hudson's Bay Company as a halfway house for exploration and trading in the inland area between Lake Superior and James Bay and as a supply depot for proposed inland posts at Missinaibi and Brunswick Lakes. In

the early years of its existence, raw materials for manufacturing, including birch for axe handles and snowshoes, were shipped to Moose Factory. Canoes were built here for shipment to that post each fall when loaded with furs. The post was subsequently renamed Brunswick and continued in intermittent operation until 1806. Archaeological investigations in 1976 revealed a cellar and foundations of a large building together with an extensive system of foundation trenches. Square and rectangular cellar depressions were located in the woods around the fort. The artifacts recovered included fragments of bricks, nails and melted glass.

The remains of a Northwest Company post on a point of land at the confluence of the Missinaibi River and Pivabiska Creek were also identified in 1976. They consisted of a rectangular cellar depression and the remains of a fireplace or oven. Artifacts were sparse.

The posts ceased operations about 1806. Both posts appear to have been ravaged by a forest fire between 1806 and 1815.

The Moose Factory/Moosonee Area

Founded by Charles Bayley in 1673, Moose Factory shares with Kingston the distinction of being the first permanent settlement in Ontario. The fort was captured by Chevalier de Troyes in 1689 and renamed Fort St. Louis. During 27 years of naval warfare on Hudson and James Bays, Moose Factory was captured and recaptured on many occasions. It was demolished some time before Hudson Bay was ceded to the British by the Treaty of Utrecht in 1713. No trace of the original Moose Factory has been found to this date and some feel that it may have eroded into the river.

In 1730 Moose Factory was rebuilt about three-quarters of a kilometer upriver from the original site. It was razed by fire on Christmas Day 1735 and reconstructed the following year, becoming the principal organizational centre and transshipment point for the Hudson's Bay Company in its struggle with the Northwest Company for the control of the fur trade of northern Ontario. By early 1800 the Northwest Company had established posts at Hayes Island, Abitibi River and Hannah Bay. Partly in response to this, the operations of the Hudson's Bay Company were reorganized with Moose Factory becoming the headquarters for all posts at the southern end of James Bay. In 1821 the residence of the Governor-in-Chief of the Southern Department of Rupert's Land was set up at Moose Factory and remained there until 1934, when the district headquarters was shifted to Winnipeg. From the mid-19th century to the end of the First World War, Moose Factory was a substantial manufacturing centre producing trading goods and boats to meet company transportation needs, including 10- to 40-ton schooners, and marsh hay boats to obtain winter feed for cattle kept on the post. The nucleus of structures of this post that functioned as a trading, warehousing, manufacturing and transport centre remained intact until the late 1950's, when the key elements disappeared in rapid succession.

In 1932 the palisade was razed. The factor's house built in 1820 was rebuilt in 1959 to modern standards but the exterior facade was retained. In the same year the store constructed in 1871 was replaced by the present modern building. The post manager's residence, built of squared logs in 1820, was demolished in the late 1950's. One by one, other buildings disappeared so that "by 1960 the historic integrity of the community was gone".[4] The staff house, built about 1847 to 1848, is the only remaining important building of the era.

The development of the present historic resource complex, largely as a tourist attraction, began with the tricentenary project of 1973 undertaken jointly by the Hudson's Bay Company and the provincial government. In the museum complex in Centennial Park, the powder magazine, the only stone masonry structure in Moose Factory, was restored along with the forge. The magazine contains interpretive display panels dealing with armourers who worked at the factory, the uses of gunpowder and the tale of the "Case of the Missing Cask". The forge displays most of the usual blacksmiths' tools and accoutrements. The museum presents an automated slide show outlining the history of the Company to 1821 together with a variety of historic items. The Hudson's Bay cemetery dates from the early 19th century and includes the graves of Bishop Horden (1893), other clergy, several factors, Richard Robins (Surgeon) and numerous children. During the summer months, an interpretive staff paid by the Ministry of Northern Affairs is present.

In December 1977 the staff house was donated by the Hudson's Bay Company to the Ontario Heritage Foundation. The Heritage Trust Branch of the Ministry of Citizenship and Culture has conducted extensive research on the structure, and restoration and refurbishing are well under way. An interpretive presentation in the lower half of the building is available to visitors. A final operating scheme for the structure has not yet been decided on.

Two old cannon have been placed in front of the new Hudson's Bay store. The store is a modern structure in every respect, differing in no way from the standard retail outlets of the Company in small communities across Canada.

St. Thomas Anglican Church, built by men of the Hudson's Bay Company in 1860 and opened on Whitsunday 1864, is a frame building of rough Gothic style. Much of its tourist attraction centres around the furnishings, particularly the ornately beaded moosehide hangings, Cree language prayer books and stained glass windows portraying its history. The graveyard, opened in 1907, is the burial ground of many native people. St. Thomas is still an active parish.

Funded by the Ministry of Northern Affairs, a survey of tourist attitudes was completed for Moose Factory Island in the summer of 1980, and an ongoing community research project was initiated in 1980-81.[5] In addition, a proposal for the preparation of a preliminary tourism development plan was presented for discussion purposes.[21] Both the content of the research and planning proposal and the approach to the recruitment of the research team are of interest. The latter has important implications for similar research in such other areas North of 50° as Fort Severn or Fort Albany.



Plate 2: Lithograph of Moose Factory, 1854. (Source: Ontario Archives.)

A multi-disciplinary team composed of an archaeologist, archivist, ethnologist, botanist, and zoologist was set up under the leadership of a professor of historical geography at York University. The assembly of such a broad array of skills has proved to be most effective, although the addition of a tourism expert would be useful. The establishment of a local historical society has been beneficial, but native involvement could be more active. No study of this type should begin without intensive provincial interministerial discussion involving Tourism and Recreation, Natural Resources, Citizenship and Culture and, in many cases, the federal Department of Indian Affairs and Northern Development.

The survey of tourists revealed a number of complaints including lack of things to do, excessive walking to reach points of interest, and insufficient ground transportation and rest services. The preliminary tour plan prepared for discussion involves improved transportation (docks at each end of the island, bus services, dust-treated roads), rest rooms and benches. Suggested improved and added attractions integrated into a well-marked tour route include a native craft centre, a summer Indian encampment, a series of plaques to explain points of interest, and gates to control movement of crowds. Additions to Centennial Park are suggested, including the reconstruction and furnishing of the old general store, the fur store, and the carpenters'

or boat builders' shop, often referred to as the "Moose Works". Two original log dwellings of Company labourers that remain in Moose Factory would be added to the complex or perhaps reconstructions undertaken. Possibly the complex could begin to manufacture boats or other items for sale on site or export. Booklets would be prepared for sale.

The plan would be implemented in a series of steps or stages as the necessary research is completed and funds become available. A strong recommendation is made for the return of artifacts collected in the recent archaeological investigations of Kenyon and Dawson and of the artifacts shipped from Moose Factory to the Hudson's Bay Company archives in Winnipeg.

Moosonee, the second community in the historic complex under discussion, is a comparatively modern settlement that began with the development of a fur trading post in 1906 by the Paris-based furriers, Revillon Frères. For this company with trading posts across Canada, including the Arctic, the Moose River post was an important centre for its James Bay district operations. A substantial depot was constructed here including a trading store, warehouse, sawmill, district manager's house, housing quarters for the post manager and clerks and accommodation for some of its Indian employees. Fifty-one per cent of the assets of Revillon Frères was sold to the Hudson's Bay Company in 1926 and the remainder in 1936.

Nothing remains of the structures of the Moose River post of Revillon Frères except the master's house (Hunter Home) that is now the private home of a former employee and a small residence (Elison House) built about 1908 for unmarried staff members and later used by the families of Company employees. The latter building has been acquired by the Ministry of Natural Resources as an historic house. Apart from historic markers, this is the only heritage resource available to tourist inspection in Moosonee. The strength of the historicity of the total complex is almost entirely associated with Moose Factory.

In 1931, the Temiskaming and Northern Ontario Railroad was pushed north from Cochrane to Moosonee. In 1932, lots were subdivided for development but sales progressed slowly. In 1954, a mid-Canada radar base was set up here and an Air Force radar base in 1962. The Canadian Armed Forces base established at Moosonee was closed in 1975. In 1966 the Moosonee Development Area Board was set up.

Tourism to Moosonee/Moose Factory began after the end of World War II. In 1947, the Ontario Northland Railway opened a goose hunting camp at Hannah Bay initially carrying hunters in by rail. Other private camps followed shortly thereafter. The inauguration of The Polar Bear Express in 1966 was an instant success and marked the beginning of mass summer tourism based on sightseeing, the lure of the bay and historic associations. From the outset to the present, heritage resources are the key element in the resource foundations of the mass tourism movement.

Moose Factory/Moosonee undoubtedly has the strongest and best developed assemblage of heritage resources in Ontario North of 50°, taking into account the quality and appeal of the intrinsic historic associations and structures combined with rail and air infrastructure support that provides access to a wide range of the tourist market. It represents an excellent example of the potential significance of heritage resources for tourism promotion and development in Ontario North of 50° given reasonable access to mass markets.

New Post Complex

This "small nineteenth century settlement and Hudson's Bay Company post that never achieved much prominence or importance...serves as a time capsule of Canadian History in the James Bay Lowland area... Besides being a fur traders settlement, the New Post site holds rare evidence of historic Indian campgrounds. Very few old Indian sites are recorded in the vast forest north of the height of land. A fur traders' cemetery lies hidden in the forest...rare ornate wooden grave markers...lichen covered headstones".[3]

Albany River Inland Posts

(a) Henley House Posts

A cluster of fur trade sites is centred around the forks of the Albany/Henley rivers. Henley House No. 1, the first inland post established by the Hudson's Bay Company in 1741 or 1743 and operated until 1759, was identified in 1978. Henley House No. 2 at the mouth of the Henley River was operated by the Bay from 1766 to 1820. For about ten years ending in 1930, Revillon Frères operated a post at the Albany River forks.

(b) Martin's Falls Post - 1782 to 1923

Martin's Falls Hudson's Bay Company post, in operation for 141 years from its opening in 1782 to its closing in 1923, was located on the south bank of the Albany River about 290 kilometers upstream from James Bay, where the first unnavigable rapids are encountered. At this point goods of the Bay moving up and down the Albany River were transshipped and the post also functioned as a trading centre. In archaeological excavations of 1975, an extensive sample of 19th and 20th century artifacts was recovered including ceramics, glass, metal, hardware, tools, paper, gun parts, beads, faunal remains and aboriginal chert materials.

(c) Gloucester House - 1777 to 1818

Between 1777 and 1786 Gloucester House functioned as the farthest inland post of the Hudson's Bay Company on the

Albany River. In the second phase of its history it functioned largely as an accommodation and provisioning centre for Company posts established at greater distances inland. Boats were built here and a shuttle operation developed between Martin's Falls and Gloucester House. After 1790 the importance of the post declined steadily so that it was shut down for a period in 1795 and finally abandoned in 1818.

At the height of its operations the first Gloucester House was probably the most substantial establishment on the Albany River. Blacksmith, carpentry and shipwright facilities together with accommodation, trading and storage structures were enclosed within a log palisade with two-storied bastions on three of its four corners. At least two interior buildings were two-storied. The second Gloucester House was less impressive but, nevertheless, featured accommodations for master and servants in a building that had a cellar, hewn plank floors and a thatched roof. A palisade again surrounded the buildings.

Excavations in 1976 successfully located Gloucester House on the north shore of Washi Lake and the foundation remains of a number of structures were outlined. About 200 artifacts that included bottles, glass, ceramics, pipes, iron kettles, trade beads, hardware, faunal remains, brass kettles, and personal clothing items were recovered.

The site has sufficient historic associations and remains to represent a strong tourist asset given a good interpretive program, possibly supported by some reconstruction. From a tourism standpoint, it is the strongest of the inland fur post assets. However, given present and anticipated tourist market volume, one must await development some time in the more distant future. Preservation is the key requirement of the moment and should be strongly supported by tourism interests.

Additional Posts

A number of posts of the Hudson's Bay and Northwest Companies have been archivally identified but not verified by archaeological field investigations. Included, among others, are Cat Lake (1788), Beaver Lake House on the Pipestone River and Sandy Narrows on the Berens River. Attawapiskat (1818) and Red Lake (1790) posts have interesting histories yet to be unravelled on location.

Industrial Historic Complexes

Red Lake Gold Mining Complex

Red Lake, Cochenour and the surrounding area contain a considerable number of historic structures and pieces of machinery in various states of preservation that are related to gold mining and associated



Plate 3: Remains of marine railway, near Ear Falls.
(Source: Ministry of Citizenship and Culture.)

lumber and sawmill operations. These have the potential for combination into a historic development complex having considerable tourist appeal, particularly in a local and regional environment offering limited competitive cultural attractions. Such a program might be integrated with, or form an extension of, the work of the Red Lake Museum Board. This group opened a new museum in Red Lake in the fall of 1982, with mining as its central theme.

Lac Seul, Chukuni River Water Transport Complex

In the decade of the 1930's and early 1940's, a substantial water transportation system developed on Lac Seul and the Chukuni River to supply the goldfields of the Red Lake district from the railway transhipment point at Hudson. At this easterly terminal of the system at



Plate 4: Abandoned hull in Hudson boat yard. This vessel was used to haul scows across Lac Seul to the gold mining operations in the Red Lake area. (Source: Ministry of Citizenship and Culture.)

Hudson, a few old warehouses and rotting piers are the only remaining visual evidence of the era, together with the delapidated hulls of several wooden tugs and scows on the shores of Lost Lake about a mile to the east. At the westerly end of the system, the relics of four marine railways that hauled the scows into the Chukuni River system are in evidence at Ear Falls to the east of the dam, to the north of Pakwash, at Snake Falls and at Sam's Portage. There are good prospects here for the development of an extensive transportation theme exhibit having substantial tourist appeal, particularly if combined with the air transport theme at Hudson.

Sioux Lookout Railway Complex

The railway provided the central historic theme for this community. The CNR station, now closed, represents the most visually attractive of the heritage structures of this complex and is clearly a



Plate 5: Head frame, Central Patricia gold mine.
(Source: Ministry of Citizenship and Culture.)

strong candidate for the housing and display of theme exhibits. In addition, it would make an attractive tourist information centre in the heart of the community. The station should not be demolished as happened recently to that at Savant Lake.

Savant Lake Complex

"The area contains a wide range of relics of historic railway development, mining, logging, and commercial fishing. Savant's railway station and water tower were of historic interest, but have very recently been demolished. However, the several hotels and rooming houses on the main street parallel to the rail line (dating from the boom times of the 1930's) still reflect the historic function of this railway depot as the home for a large transient population. On Sturgeon Lake, several pieces of antique machinery exist on relic mining exploring camps dating from 1899. The abandoned St. Anthony Mine (1930's) contains substantial remains of buildings and machinery as well as landscape features of historic interest. O'Brien's Landing, Clarke's Depot, and Trappers Point sites, developed into tourist camps in the 1950's and 60's, contain some relics of historic logging and commercial fishing camps."^[6]

Pickle Lake Complex

"The...area's major features of historic interest are the remains of the Central Patricia mine complex. Of particular significance are its open-steel headframe and the townsite — houses, original schoolhouse (now abandoned), church, and hotel."^[6]

Geraldton/Longlac/Nakina Complex

The bulk of the resources at this complex are associated with mining developments in the Geraldton area to the south of 50° North and with structures located within the town itself. At Longlac the focus is on logging. The station at Nakina, however, is one of the last remaining structures of the National Transcontinental Railway, that at Savant Lake having been torn down recently. Buildings of this type can frequently function effectively as tourist information and handicraft merchandising centres. They have been used effectively in other places as shelters for outdoor and indoor recreation activities.

HISTORIC PLAQUES OR MARKERS

From the standpoint of the supply foundations for tourism development and promotion, historic plaques are of limited value in an overall sense. Within an historic development complex they may contribute substantially to the visitors' understanding and enjoyment but the basic decision to visit rests upon the attributes of the site itself. Erected in communities and along travelways, particularly highways, they alert tourists and local residents to the fact that they have arrived at, or are in the general vicinity of, an historic site structure and convey the essential related information in summary form.

The impact of the plaques on tourists varies, being virtually nil in cases in which a primarily local phenomenon is involved or the traveller has no interest in the subject. In cases where the tourist has a basic interest in and sufficient background knowledge and perspective about the phenomenon, considerable enrichment of the travel experience may result. Possibly he will be induced to stay longer in the area and visit some of the more substantial developments that are present, particularly if his travel schedule provides sufficient latitude.

In the entire expanse of Ontario North of 50°, there are only eight provincial historic plaques and no national historic markers. As indicated in the excerpts from the provincial booklet prepared for the historic marker program, plaques are located in Hudson, Moosonee/Moose Factory (three), Osnaburgh House, Red Lake (two), and Sioux Lookout.

Hudson

Canada's Pioneer Airlines

"Commemorates some of Canada's earliest civil air services, and the pioneer bush pilots who flew the aircraft." [11]

This is a fitting location for the marker given that, during the gold rush era, Hudson was the busiest airport in the world. Something of greater interest might be developed here given the historic significance of the location in the evolution of northern air travel.

Moononee/Moose Factory

Captain Thomas James

"Commemorates this noted English navigator's journey in 1631-32 to Hudson Bay in search of the Northwest Passage. (River Road, between First and Cotter St., Moosonee.)" [11]

Moose Factory

"Commemorates the second oldest post built by the Hudson's Bay Company. Constructed in 1673, it was captured by the French in 1686 and formally returned to the H.B.C. by the terms of the Treaty of Utrecht in 1713. It has long been the Company's principal establishment on James Bay. (Moose Factory.)" [11]

Henry Hudson

"This famous navigator made several trips of discovery including one up the Hudson River as far as the site of Albany. In 1610 he discovered Hudson Bay and wintered there 1610-11. In June 1611, his mutinous crew set him adrift in a small boat with his son and seven others. They were never seen again. (Centennial Park, Moose Factory.)"^[11]

Rat Rapids (Osnaburgh House)Osnaburgh House 1786

"This fur-trading post, originally situated on Lake St. Joseph, was built by the Hudson's Bay Company to counteract the activities of the Nor'Westers in that area. Its success encouraged the establishment of other H.B.C. posts at Red Lake, Cat Lake, Lac Seul and elsewhere. (Highway 599 at Rat Rapids, 24 miles south of Pickle Lake.)"^[11]

Red LakeRed Lake Mining District

"Describes the discovery of gold in the Red Lake area and the founding of this productive mining community. (Junction of Highways 105 and 125 near Red Lake.)"^[11]

Red Lake House

"Relates the story of the successive Hudson's Bay Posts established in the area since 1790. (In front of the Municipal Offices, Red Lake.)"^[11]

Sioux LookoutUmfreville's Exploration 1784

"Records the attempt of an employee of the North West fur trading company to find a suitable alternative canoe route from Lake Superior to the West. This was prompted by fear of American control over the traditional route via the Grand Portage and Pigeon River. (Sioux Lookout.)"^[11]



Plate 6: Revillon Frères Museum at Moosonee attracts many tourists during summer. (Source: Ministry of Tourism and Recreation.)

The markers at Moose Factory and Moosonee are probably appreciated by those making a leisurely tour after arriving on the Polar Bear Express but their contribution to total visitor impact is likely modest. The impact of the remaining markers, as for example at Fort Severn and Henley House, is probably minimal. Historic plaques erected at these sites might add substantially to the cultural dimensions of landscape tours by canoe and plane. The current scale of the market now or in the immediate future, however, obviously places a low priority on erection of additional markers.

Many northern settlements that have been occupied fairly continuously since the early fur trade have a history worthy of a marker, both from the standpoint of visitor interest and, more particularly, the contribution to the generation of community pride, coherence and individual identity.

At selected heavily used points, the plaques might be supplemented by a tape recording to increase interest and information.



Plate 7: Gun powder magazine, Moose Factory Museum Park. (Source: Ministry of Tourism and Recreation.)

MUSEUM FACILITIES

At the outset, it is important to note that the justification for museum development rests primarily upon social goals and objectives. Museums are unreservedly accepted as a necessary and valuable component of the social/cultural capital of any nation, region or community. Their significant advantages for tourism essentially represent added or spinoff benefits. Fortunately, in this case there is a wide area of mutually supportive interrelationship between the social goals of museum operations and the economic-oriented objectives of tourism.

In the major national and regional capitals of the world, museums and related galleries are a major element in the total array of tourist attractions. They may be the primary factor driving the tourist to a centre, particularly where education and research are the motivating travel forces. However, museums in many smaller centres with their repetitious collections, catalogued and displayed in chaotic disarray resembling attic storage, can be, and all too often are, a deadly bore.

They are something that the tourist enters to pass time in inclement weather or while experiencing an unexpected travel break, car breakdown or delayed plane connection. On the other hand, a small local museum featuring a well-catalogued and attractively displayed collection associated with a meaningful community or regional archaeological/historic phenomenon can have substantial tourist impact, particularly when well publicised in the appropriate market. The Ojibway scrolls in the Lake-of-the-Woods Museum on Water Street in Kenora or the gold mining water transportation between Hudson and Ear Falls are cases in point, although the former is well south of the 50th parallel.

As indicated by the following summary, museum development in Ontario North of 50° is limited. The Revillon Frères Museum in Moosonee, essentially an historic building, and the Museum Park in Moose Factory, a somewhat special type of development, have been discussed in a previous part of the report dealing with historic sites and structure developments in those James Bay settlements. The facilities in Sioux Lookout and Ear Falls represent a part of the supply foundations for tourism as well as the facilities opened in 1982 in Red Lake.

Ear Falls Historical Museum

"A log building constructed as a centennial project to house displays that illustrate the progress of [marine] transportation in this northern area.

Open: May 19 to Sept. 30 daily, 9 a.m. to 5 p.m."^[11]
 Curator - Joyce Appel
 Box 358, Ear Falls, Ontario P0Y 1T0
 Phone: (807) 222-3198

Sioux Lookout Museum

This is a town-owned and -operated facility housed in two portable school rooms on Frederick Street. The museum contains Indian artifacts, railroad items, lumber era relics and other local history memorabilia, including early manufacturing tools for aeroplane skis. Attendance in 1981 was about 1000 with 800 registered visitors, including many tourists. The Museum Board is composed of three local residents and two councillors.

Open - Monday to Friday and Sunday 1 pm to 5 pm
 Contact - Mrs. Eva Walsh,
 Chairperson of the Board
 Phone: (807) 737-2040

Red Lake Museum

This museum was officially opened November 1, 1982. Mining is the central theme with exhibits housed in and around a two-storey log building that was the residence and office of the overseer for the horedrawn barges through the Chukuni River rapids on the water route from Hudson and Lac Seul.

Contacts- Mike Kudlowski,
Chairman of the Museum Board
Phone: (807) 727-2643
- Mrs. A. Church,
Sec/Club Red Lake
Phone: (807) 737-2311

Revillon Frères Museum

Revillon Road
Box 190, Moosonee

"The Revillon Frères Fur Trading Company were the first settlers of Moosonee and in the museum photographic panels and artifacts of early life in the settlement are displayed.

Open: June 15 to September 7,
1 to 6 p.m. daily except Fridays." [11]

Moose Factory Museum Park

"This museum is located in a park area on the site of the early trading post buildings. It is comprised of a forge building, a gunpowder magazine and orientation building which illustrates the story of the development of the area by Hudson's Bay Company and other agencies.

Open - June 9 to September 30,
Monday through Saturday,
10 a.m. - 12 noon and 1 p.m. - 5 p.m.,
Sundays 2 p.m. to 5 p.m." [11]

MAJOR IMPLICATIONS FOR TOURISM PLANNING, DEVELOPMENT AND OPERATION

It is essential that tourism interests in Ontario North of 50° clearly recognize the strengths and limitations of their heritage resources as an element in the present and future supply foundations of their industry both now and in the future. Adequate recognition implies strong support for the activities of the Archaeological and Heritage Planning Branch of the Ontario Ministry of Citizenship and Culture and meaningful involvement in all major planning, preservation and restoration activities in Ontario North of 50°. In this regard it would be beneficial for local tourism representatives to become actively associated with the current heritage development planning at Moose Factory.

From the foregoing discussion, the anticipated limited volume of tourist travel in remote areas North of 50° and the acute competition between government programs for financial resources, it is clear that research and preservation will provide the central focus of efforts. Development, particularly of a nature that will make a marked impact on tourism, must be restricted to a few key locations where demand appears reasonably strong, now or in the near future.

RELATED TO PREHISTORIC ARCHAEOLOGY

In general there are no significant tourism potentials or values associated with prehistoric archaeological sites presently located in Ontario North of 50°. The sites lack visual appeal, being mainly the remains of small itinerant-type campsites (fire pits, stone rings, bone/stone artifactual accumulations). Since they are situated in isolated locations, encountered only by native trappers and the occasional wilderness-travelling sportsman, investment in interpretation displays is not cost-effective. Huge burial mounds like those of the Rainy River area or the extensive village sites of La Cloche or Sault Ste. Marie which have tourism development potentials are not encountered in Ontario North of 50°.

At locations where excavations have taken place, as for example at Ear Falls, the prehistoric occupation theme supported by unearthed artifacts can be the basis of a museum exhibit of considerable local resident and tourist appeal. It might be the central feature of a museum program.

The Moose Factory/Moosonee tourism destination area represents an exception to the foregoing generalization. Here, there is sufficient current and potential tourist volume visitation to justify investment in the display of any major prehistoric sites and artifacts uncovered. Modern presentation and interpretation techniques, including modelled life scenes (possibly papier mâché) with tape-recorded interpretations, could be set up at modest cost. The displays could be stored indoors at the close of each tourist season.



Plate 8: Archaeological excavations, such as this one at Forestry Point near Red Lake, appeal to tourists and residents. (Source: Ministry of Citizenship and Culture.)

Ongoing archaeological excavations have enormous tourist and local resident appeal. The dig at Ear Falls in 1980 drew 1400 visitors including local residents and American lodge guests and campers. From the tourism standpoint this aspect should be exploited at each excavation to the fullest extent feasible.

RELATED TO INDIAN ROCK PAINTINGS

The Indian rock art sites represent a major potential element in the cultural supply foundations for tourism development in Ontario North of 50° , functioning in several quite distinct ways:

- They may be an important component in the total package of natural and cultural features associated with a wilderness travel experience or an added enrichment to a hunting or fishing trip. To some extent they already contribute in this manner. In the immediate future this is likely to be their main contribution to tourism.
- They may be the central component of a specialized culture oriented tour. The exceptional grouping at Cliff Lake could probably support a fly-in tour operation or represent a central feature of a larger tour of rock paintings across the entire region.
- They may become an element in the promotion and advertising of wilderness tourism or tourism in general in Ontario North of 50°, particularly in the northwestern region.

Given the potential significance of the pictographs to tourism, it is desirable for the industry to support and encourage the Historical Planning and Research Branch of the Ministry of Citizenship and Culture to develop a comprehensive inventory and management program for the identification, preservation and interpretation of these resources. Indians, outpost sport camp operators and wilderness travel entrepreneurs should have a central and active collaborative and co-operative role in such an undertaking.

RELATED TO HISTORIC SITES AND STRUCTURES

The Red Lake/Ear Falls/Hudson/Sioux Lookout complexes in Ontario North of 50° have a strong combined set of heritage sites and structures related to gold mining and its supporting water and air transportation system. These could have strong tourist appeal if exploited on an integrated theme basis by local communities acting in concert with strong leadership from the Ministry of Citizenship and Culture. It would appear that the identification of the total extent of the heritage resources and the preparation of a satisfactory plan for preservation and the sequential development of potentials given to the build-up of local interest and tourist travel represent the essential elements of a practical strategy. Museum boards that would be prepared to assume a somewhat larger sphere of responsibility are, perhaps, the logical local agencies to work with the responsible provincial agencies.

The historic associations and archaeological remains of the fur trading posts and fortifications represent a strong potential component of the total heritage resources in Ontario North of 50° from the standpoint of tourism. Both the Ministry of Tourism and Recreation and the private tourism sector must urge the Archaeological and Heritage Planning Branch of the Ministry of Citizenship and Culture to accord priority to the preparation and implementation of a comprehensive

inventory, preservation and custodial program. Such a program should involve the native people in a central way. Given market realities it is expected that development will take place only at a few select locations where tourism volume warrants.

Strong continued support should be given by tourism interests to activities of the Ontario Heritage Foundation and the Archaeological and Heritage Planning Branch at Moose Factory. Fort Albany and Fort Severn, particularly the latter, also require attention from the standpoint of tourism development.

RELATED TO HISTORIC PLAQUES

While tourism interests should support the plaque or marker program, it is important to recognize their modest impact in general. In remote locations this probably represents the justifiable limit of investment from a cost-effectiveness standpoint.

RELATED TO MUSEUMS

Tourism interests should almost invariably become involved in local museum development to ensure that exhibits are presented in a manner that will maximize visitor impact within the limits of the resources usually available.

ISSUES

Some of the more significant issues related to heritage and resource preservation and development are associated with tourism aspects. While it is generally recognized that there are important mutual benefits to both fields arising from recent interactions, some fundamental issues exist.

It is contended by many that an emphasis on tourism opportunities and benefits often thwarts, distorts, or disrupts the introduction and continuation of the proper balance of programs and projects in the heritage field per se. Too high a percentage of limited financial resources can be devoted to "tourist traps", leaving inadequate funds for smaller, scattered developments of local importance and for the less spectacular but essential identification and preservation of remote assets such as Gloucester House or Fort Churchill/Nieu Savanne. To a degree, the emphasis upon Moose Factory historic fur trade heritage resources may provide an illustrative case in Ontario North of 50°.

The final disposition of discovered artifacts and the method of reporting of the findings have become an issue of some consequence that has examples in Ontario North of 50°. Frequently the materials collected are shipped off to universities and museums in central urban areas for further research and ultimate storage and display in surroundings safe from fire and deterioration and available for viewing by large numbers of people. A contending point of view maintains that the artifacts should be retained ultimately in the location where they are found so that they may make their maximum contribution to the development of local identity and pride, and to the supply foundation for tourism with its attendant beneficial economic impacts. At Fort Severn, the residents are annoyed by the fact that artifacts removed from digs at Churchill/Nieu Savanne and Fort Severn fur trade forts and posts have not been returned to the community. Moreover, no report of the findings has been made to the community by the archaeology groups or the universities involved.

Indian attitudes towards and opportunities for involvement in archaeological research in general and the exploitation of associated spin-off benefits for tourism are an important basic issue. The native population has voiced strong objections on a number of occasions to archaeological investigations in burial grounds, particularly when remains are removed for examination and storage elsewhere. Frequently, native people have limited control of or meaningful involvement in the reconstruction, preservation or interpretation activities and associated tourism development. The recent agreement between Parks Canada and Manitou Rapids Indian Band with respect to the Manitou Burial Mounds, a National Historic Site, represents a significant achievement with respect to the solution of many of the aforesaid issues. Under these arrangements, the Indians have been placed in a central position with respect to research and development, receiving access to labour, custodial and interpretive jobs on a permanent basis. They have been

caretakers of the site for seven years and have helped in excavations for four years, all funded by Parks Canada. The interpretation centre is also staffed by the Band and opportunities are available to reap the economic tourism spin-off benefits. This arrangement may represent a highly satisfactory model for Indian heritage development in Ontario North of 50°. Most native settlements have archaeological site potentials; the region has experienced 3000 years or more of occupation. Agreements whereby Indians are trained for archaeological research and the possible development of tourism potentials related thereto could be very beneficial.

There is a considerable difference of opinion with respect to the marking and interpretation of isolated historic sites that cannot be adequately supervised. While a contribution to the marketing and enjoyment of wilderness travel would result, there is a great risk that the sites will be pillaged and ruined in other ways by some inconsiderate or unthinking tourists and vandals. The issue is of major importance with strong arguments on both sides. Fortunately the appreciation of archaeologists for the tourism spin-off benefits of these fields has increased in recent years and real progress has been made towards the adoption of practical beneficial positions and outlooks on both sides.

SUPPORT DOCUMENTATION

RELATED AGENCIES, PROGRAMS AND INFORMATION OUTPUT

From the standpoint of the needs of future tourism planning and development in Ontario North of 50°, attention is focused on both provincial government administrative structures and local historic and archaeological associations. In many situations, the latter can be of major importance relative to the needs of tourism. Contact with federal agencies can be arranged through the provincial administration; hence, the structures at this senior level of government are not discussed.

Provincial Administrative Organizations

The provincial government administrative structures for museums and historic and archaeological matters is summarized in Charts 2 and 3.

CHART 2

ORGANIZATION, ONTARIO HERITAGE FOUNDATION

77 Bloor Street West, Toronto

Chairman John White

Board of Directors (About 30)

Standing Committees (4)

Heritage Trust Architectural Heritage Archaeological

The foundation is an autonomous chartered body that receives administrative support from the Ministry of Citizenship and Culture. The noticeable correlation between the standing committee structure of the Ontario Heritage Foundation and that of the branches of the Heritage Division of the Ministry is discussed subsequently.

Among the functions of the Foundation as set forth in the Ontario Heritage Act, those related to the acquisition, holding and restoration of historical and archaeological properties and the erection of historic markers or plaques are of primary interest in the development of tourism in Ontario North of 50°. In this regard, the primary focus

of current activity is in the Moosonee/Moose Factory tourism area. In 1977, the Hudson's Bay Company donated the staff house at Moose Factory to the Foundation and research and restoration work on this building have continued since. Similar work has been done on the Anglican church although it remains a private structure. Two additional historic employee houses still standing in the settlement will probably be acquired shortly. Communicative plaques have been erected at several locations North of 50° as noted in the previous discussion of patterns.

Professor S. Ray, a historical geographer formerly at York University who has recently joined the staff at the University of British Columbia, has co-ordinated a multi-disciplinary research effort for Moose Factory historic development. The team, including an archaeologist, historian, architect and historical geographer, was a highly productive organizational arrangement for a historic development research and planning project in a small native community. A preliminary heritage tour plan intended to guide future government investment was put forward for discussion.

The head office of the Historical Planning and Research Branch in Toronto maintains a province-wide file of archaeological sites. For each site, the location is indicated by Borden designation number, a brief description of the features provided, and support documentation indicated. The sites are mapped at a scale of 1:50,000 and/or 1:250,000. Discussions with the regional archaeologists are necessary, however, to obtain a full appreciation of the sites, particularly their tourism development aspects. Of 7000 sites across Ontario perhaps less than five per cent are situated in Ontario North of 50° and many of these were identified by the field investigations undertaken by the West Patricia Archaeological Project.

Local Associations

There are only two local associations with their central administration in communities North of 50°. One is still essentially in the formative stages.

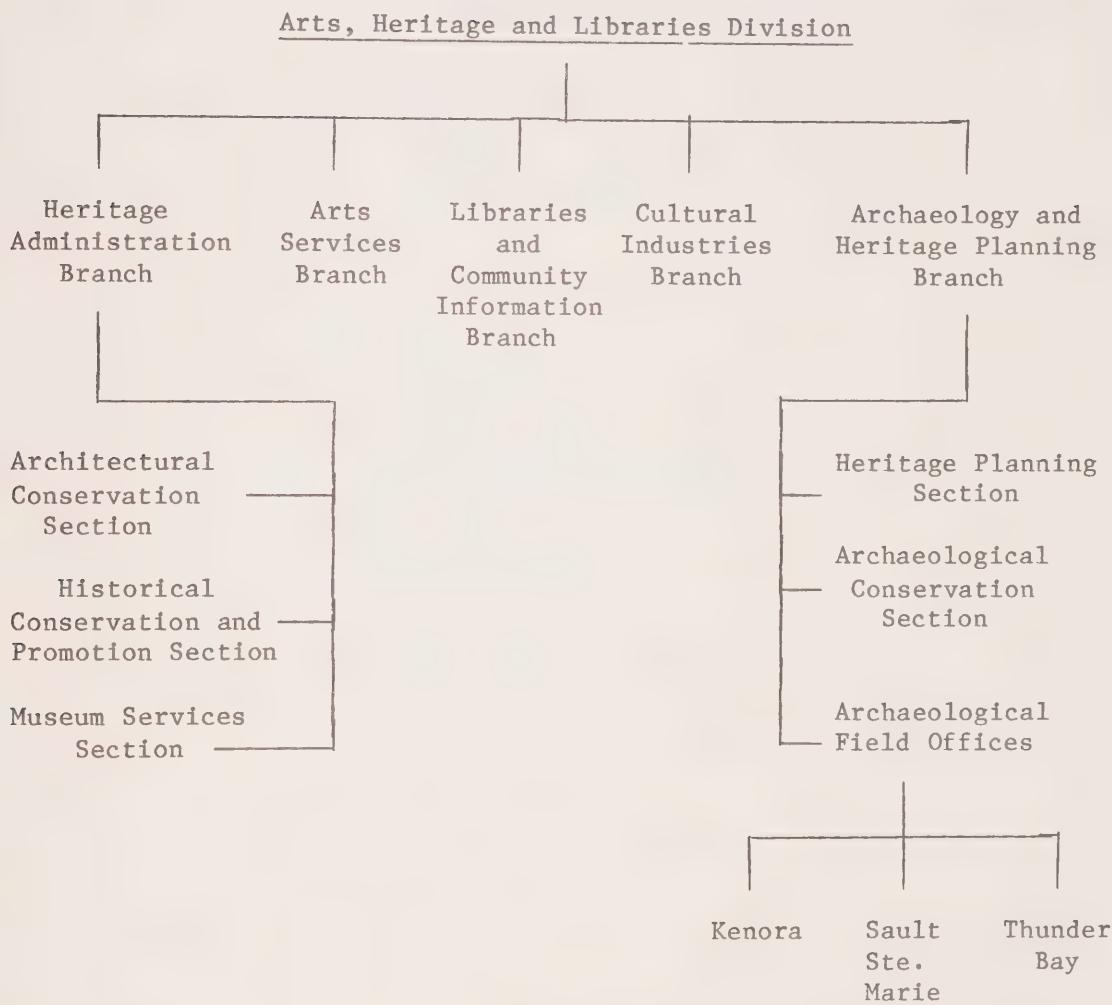
Moose Factory Historical Society

P.O. Box 257
Moose Factory POL 1W6
John S. Long, Chairman
(705) 658-4655
Gertrude Morrison, Secretary
(705) 658-4520

This is a solid group with about 84 members who are involved in the local historic development program.

CHART 3

ORGANIZATION, MINISTRY OF CITIZENSHIP AND CULTURE

Sioux Lookout District Historical Society

Sioux Lookout POV 1T0
 Ms. Rita Furlane, Secretary-Treasurer

This is a new group that registered
 with the Ministry of Citizenship and
 Culture in March 1982.

There are historical associations in centres somewhat to the south of 50° North including Kapuskasing, Timmins, Iroquois Falls, Thunder Bay and Kenora. The latter two have wide-ranging area interests including parts of Ontario North of 50°.

Thunder Bay Historical Museums Society

291 South May Street
Thunder Bay, Ontario P7E 1B5
Mr. Roy Priovesand, President
Phone: (807) 577-1602
Miss Joan Hebden, Secretary
Phone: (807) 623-6582

Lake of the Woods Historical Society

P.O. Box 720
Keewatin, Ontario POX 1C0
James Forbes, President
Phone: (807) 547-2648
Carol McMurchie, Secretary
Phone: (807) 547-2485

There are no local chapters of the Ontario Archaeological Society in Ontario communities North of 50°. The Canadian Rock Art Restoration Association (CRARA), founded by the late Dr. Selwyn Dewdney of Kenora, Ontario, has a local chapter in northwestern Ontario. For about ten years the association has produced a bi-annual journal/newsletter.

Canadian Rock Art Restoration Association (CRARA)

T. Jones, Corresponding Secretary
Box 161
Dalmeny, Saskatchewan

Northwestern Ontario Chapter (CRARA)(1)

Contact - C.S. Reid
Regional Archaeologist
Ministry of Citizenship and Culture
Kenora

Contact - D.W. Arthurs
Field Archaeologist
Ministry of Citizenship and Culture
Thunder Bay

(1) See List of Contacts for full address and phone number.

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M.E. Perkins, Information Officer
Phone: (416) 965-4021

Heritage Trust

H. Stovel, Architect
Phone: (416) 965-5727
D. MacLeod,
Phone: (416) 965-5727

Northwestern Region Archaeological Field Office

207 First Street South, P.O. Box 2880
Kenora, P9N 1C2
C.S. Reid, Regional Archaeologist
Phone: (807) 468-8928

Northcentral Region Archaeological Field Office

1825 E Arthur Street
Thunder Bay, P7E 5N7
W.A. Ross, Regional Archaeologist
Phone: (807) 468-8928
D.W. Arthurs, Field Archaeologist
Phone: (807) 468-8928

Northeastern Region Archaeological Field Office

390 Bay Street,
Sault Ste. Marie, P6A 1X2
T.A. Conway, Regional Archaeologist
Phone: (705) 253-2625

Ontario Ministry of Northern AffairsNortheastern Regional Office

421 Bay Street
Sault Ste. Marie, P6A 1X3

Regional and Community Development Branch

E. Belfrey
Phone: (705) 942-0100
(Involved in historic development at Moosonee and
Moose Factory, especially as it relates to tourism.)

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Volume Five
The Climate Supply Foundations

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INTRODUCTION

This volume on *The Climate Supply Foundations* is one of a set of five presenting the results of the study of *Tourism Development in Ontario North of 50°* undertaken for the Royal Commission on the Northern Environment. The terms of reference for the study established three main objectives:

- 1) to assess the magnitude and socio-economic significance of development opportunities for wilderness-based tourism in the region;
- 2) to design a set of alternative policies and strategies to ensure that prospective local entrepreneurs are placed in a position to effectively exploit and benefit from these opportunities, and
- 3) to evaluate the future role of tourism within the context of increasing general development pressures and their associated economic, social and natural environmental consequences for people and resource uses in the region.

Four of the five volumes, including this one, present detailed technical information and evaluations for four components of the tourism field: the climatic resource foundations, the heritage resource foundations, transportation infrastructure, and tourist facility development. The fifth volume, *Issues and Policy Options*, summarizes the main issues confronting the development of tourism in Ontario North of 50° and identifies and evaluates the range of policy and strategy alternatives for resolving them. It represents a synthesis of the perspectives and insights gained during the course of the research.

The four detailed technical reports on components of the tourism field have a common four-part format. The first part, *Pattern*, describes and evaluates each component in relation to tourism development, adopting historic, current and future time perspectives as appropriate.

The second part, *Major Implications for Tourism Planning, Development, and Operation*, examines the implications of pattern in terms of opportunities and constraints facing government agencies, private entrepreneurs and researchers involved in investment and management planning and development and operational decision-making in the particular component of the tourism field under consideration.

The discussion in the third part, *Issues*, can serve as a basis for informed decision-making regarding the component and constitutes input for the volume on *Issues and Policy Options*.

The fourth part, *Support Documentation*, consists of three main sections. The first, *Related Agencies, Programs, and Information Output*, discusses the activities of agencies having functions related to the component and their interface with the tourism sector, and thereby provides useful information for those involved in the planning, development and operation of tourist facilities, particularly native communities and private entrepreneurs who may not be familiar with the research and decision-making structures of government for the component. The second, *Contacts Made in Course of Study*, lists the people who have contributed in an important way to this study and who may be useful to others in the future. The third, *References*, identifies the documents that were consulted during the course of the study.

PATTERN

The selection of climate as a parameter for the discussion of the natural environmental supply foundations reflects the critical determinant position that it occupies for tourism. No other single natural phenomenon exerts such pervasive and significant influence upon past, present and future tourism development patterns and prospects in Ontario North of 50°. It sets the broad framework for the identification and understanding of supply and demand relationships. It is frequently a significant factor in investment decision-making for specific facilities.

CLIMATOLOGY STRESS INDEX

In the development of the climatology stress index, weather records were evaluated in terms of four major dimensions considered vital to the quality of the overall human living experience: discomfort, psychological impact, hazard and outdoor mobility. The various factors incorporated under each dimension, the point score limits and the weighting formula employed are shown in Table 1. The source report can be examined for further detail respecting criteria employed to identify stress conditions.

A general overview of climatic strengths and limitations can be gained from an examination of climatology stress indices for Ontario North of 50° and their comparison with similar values for other locations in the province as shown in Table 2. The overall disadvantaged position of the study area is clearly revealed.

The group of low values indicative of more satisfactory climatic conditions includes southern Ontario cities (Toronto 36, Windsor 37) and their major tourist and outdoor recreation destination areas (Muskoka 43). A second clustering of index values between 43 and 50 includes communities within the northern sections of the Great Lakes-St. Lawrence Forest Region (Atikokan 50, Kenora 50, North Bay 46, Sault Ste. Marie 46, Thunder Bay 44). The third grouping of values ranging from 53 to 75 includes centres within the northern portion of the Boreal Forest Region of the Shield and the Forest/Barrens Region of the Hudson/James Bay Lowlands (Timmins 53, Moosonee 56, Big Trout Lake 60, Winisk 75). Here, the stress index is 43 to 108 per cent above that for southern Ontario centres and 20 to 50 per cent above the values for the northern portion of the Great Lakes-St. Lawrence Forest Region.

TABLE 1
PARAMETERS FOR DETERMINATION OF CLIMATOLOGY
STRESS INDEX

<u>A. Discomfort</u>		Points	Points
Winter	Windchill	30	
	Length of Winter	20	
	Severity of Winter	<u>20</u>	
		<u>70</u>	
Summer	Humidex	10	
	Length of Summer	5	
	Warmth of Summer	5	
	Dampness	<u>10</u>	
		<u>30</u>	
		<u>100</u>	<u>100</u>
<u>B. Psychological Impact</u>			
	Darkness	35	
	Sunshine	25	
	Wet Days	25	
	Fog	<u>15</u>	
		<u>100</u>	<u>100</u>
<u>C. Hazard</u>			
	Winds	30	
	Thunderstorms	10	
	Blowing Snow	40	
	Snowfall	<u>20</u>	
		<u>100</u>	<u>100</u>
<u>D. Outdoor Mobility</u>			
	Visibility	40	
	Freezing Precipitation	40	
	Snowfall	<u>20</u>	
		<u>100</u>	<u>100</u>

$$\text{Stress Index} = \frac{5A + 2B + 2C + D}{7.5}$$

TABLE 2

CLIMATOLOGY STRESS INDICES FOR SELECTED LOCATIONS IN ONTARIO NORTH
OF 50° AND COMPARATIVE LOCATIONS

<u>Locations</u>	<u>Index⁽¹⁾</u>
<u>Northern Ontario</u>	
Atikokan	50
Big Trout Lake*	60
Kenora	50
Moosonee*	56
North Bay	46
Sault Ste. Marie	46
Sudbury	54
Thunder Bay	44
Timmins	53
Winisk*	75 ⁽²⁾

* Locations North of 50°

Southern Ontario

Muskoka	43
Ottawa	44
Toronto	36
Windsor	37

Source: Reference [5]

(1) The lower the index value, the more suitable the climate conditions.

(2) Estimated by extrapolation of stress indices for Churchill, Manitoba (82) and Great Whale River, Quebec (70).

TOURISM AND OUTDOOR RECREATION SEASONAL LENGTH

A study of seasonal length and climatic quality for tourism and outdoor recreation across Ontario provides useful information. [4] Again, the serious limitations imposed by climate on viable tourist facility development in Ontario North of 50° are clearly evidenced. The essential elements of the pattern of seasonal length are shown in Table 3.

TABLE 3

CRITERIA FOR DETERMINATION OF WINTER AND SUMMER TOURISM AND
OUTDOOR RECREATION SEASONAL LENGTH

Winter - Begins on median date of the first snow cover of 2.5 cm or more and terminates on the median date of last snow cover of 2.5 cm or more.

Spring Thaw - A two-week period following the termination of winter when the ground is too wet for outdoor activity, and ice and water conditions are unsuitable for boat and canoe travel.

Spring Shoulder - Begins with termination of Spring Thaw and ends with start of High Summer.

High Summer - Begins on date when mean daily maximum temperature rises above 18°C.

Autumn Shoulder - Begins with termination of High Summer and terminates with the onset of Winter.

A two-season approach was adopted including winter and complete summer. The latter has a central high summer period and flanking spring and autumn shoulder components. Snow cover and thermal condition, two vital dimensions of outdoor recreation activity and tourism, are the determinant features.

From a climate standpoint, winter season activity is dependent upon a satisfactory cover of snow and ice while dry land and open water are prerequisites for summer season pursuits. On the basis of thermal conditions, a tripartite division of the complete summer, which has a significant correlation with observed activity patterns and general recognition in tourism literature, was introduced. Characteristic summer activities increase in number and intensity as the cool spring shoulder progresses, reaching a maximum in the warm central high summer and tapering off fairly rapidly through the cool autumn shoulder.

Two features are noted with respect to Chart 1, indicating characteristic activity pursuits by season. The spring shoulder is of major significance for tourism in Ontario North of 50° since it coincides with the spring angling and black bear hunting season that is of major consequence in the market and revenue patterns of outpost sport camps. The autumn shoulder includes the fall angling upsurge after the midsummer decline and the important fall goose and moose hunting operations.

CHART 1

CHARACTERISTIC ACTIVITY PURSUITS ASSOCIATED WITH THE SEASONAL DIVISIONS

Source: Reference [4], Volume One

Attention can now be directed to the statistical values in Table 4. Only the major facets of the pattern will be noted. Those involved in planning and management can refer directly to the wealth of detailed material contained in the massive source document.

Winter is clearly the dominant season in Ontario North of 50°. Along the coastline of Hudson and James Bays and in the more northerly interior sections of the study area, it represents 55 per cent (Moosonee) to 62 per cent (Winisk) of the entire year. In more southerly locations at the northern limits of the Boreal Forest Region, it accounts for 52 per cent (Sioux Lookout) to 54 per cent (Red Lake, Armstrong). Assigning an index value of 100 to Winisk, seasonal length values for the group of stations North of 50° range upwards from 83. Other northern locations considerably

to the south of latitude 50° North display a winter season covering 43 per cent (North Bay) to 50 per cent (Timmins, Geraldton) of the entire year. In densely populated parts of southern Ontario and their adjacent tourist and resort areas shown in the table, winter prevails over 33 per cent (Toronto Island) to 39 per cent (Orillia).

High summer, which corresponds with the greatest variety and intensity of traditional tourist and outdoor recreation activity in the warm months, is noticeably short in Ontario North of 50°. At Winisk there is no high summer and values for other coastal settlements and far northern interior points range from 16 per cent of the year (Fort Albany, Big Trout Lake) to 26 per cent (Red Lake, Sioux Lookout). Using an index of 100 for Toronto Island, comparable values for the entire area North of 50° having a high summer range from 46 (Big Trout Lake) to 77 (Red Lake). The high summer season in other northern centres shown in the table covers 25 per cent (Kapuskasing) to 33 per cent (North Bay) of the year. Index values range from 73 to 94.

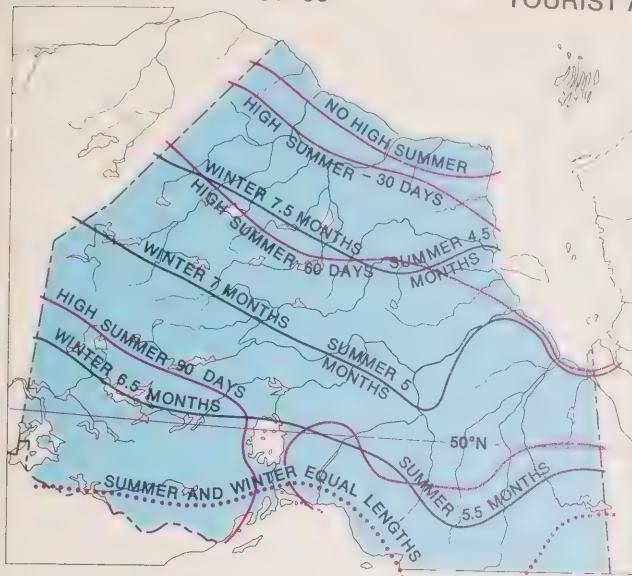
The spring shoulder season of the complete summer is brief in communities North of 50°, ranging from 12 days (Mammamattawa) to 27 days (Fort Albany). The autumn shoulder occupies between 48 days (Sioux Lookout) and 60 days (Fort Albany). This more closely approximates southern conditions.

The pattern for the complete summer again displays the shortness of the warm season for points North of 50°. Giving Toronto Island a base index of 100, values in this northern area under study range from a high of 71 for Sioux Lookout to a low of 53 at Winisk.

TOURISM AND OUTDOOR RECREATION SEASONAL QUALITY

The approach to quality evaluation adopted in the source document [4] involved a complex and detailed sequential set of analytical and synthetic procedures structured around the concepts of the suitable activity day and the degree of user satisfaction. Suitable activity day evaluation involved determination of the number of days meeting the basic climate needs for participation in characteristic summer and winter tourism and outdoor recreation activities or activity groupings. In this process, in which the practical time limits for activities are set, quality is in a sense a function of seasonal length. The parameters and criteria employed are shown in Table 5.

Through introduction of the concept of the degree of user satisfaction, the critical question "How suitable?" is addressed. As an initial step, percentages of satisfaction for the critical climate factors of comfort, weather, snow cover and water temperature were established. In Table 6, the weather factors of precipitation and cloud cover conditions are shown.

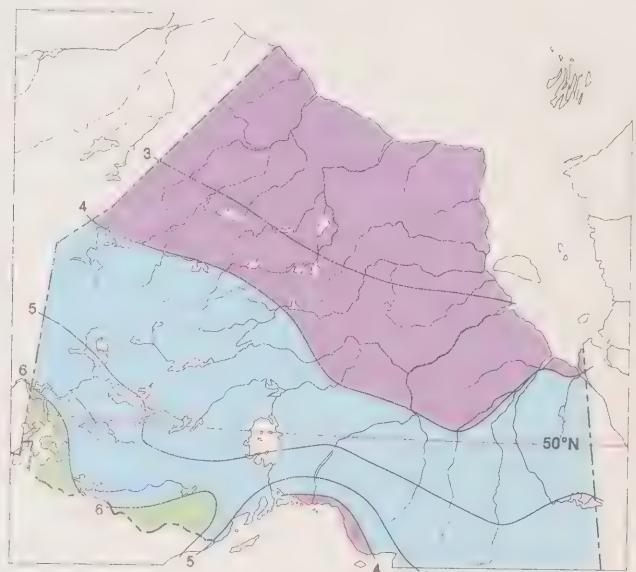


MEAN SEASONAL LENGTH COMPARISONS

- Equal winter and summer length
- Winter-summer length comparison
- High summer length

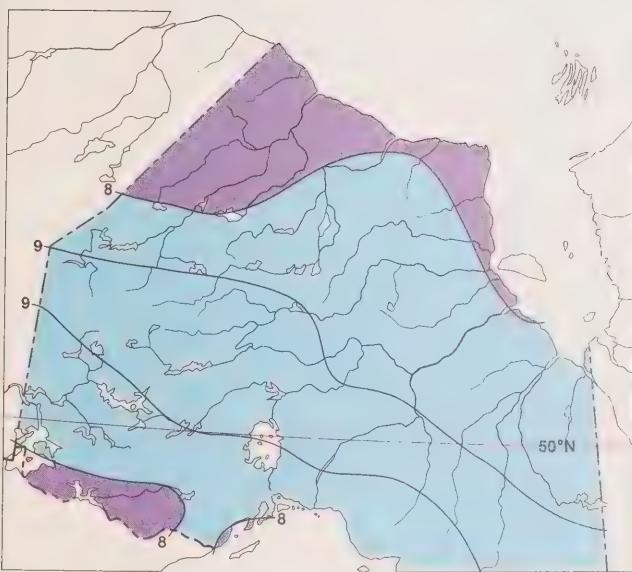
COMPLETE SUMMER MEAN CAPABILITY CLASS

- Good
- Fair
- Poor
- 3, 4, 5, 6
Point Rating (Scale 0-10)



WINTER MEAN CAPABILITY CLASS

- Excellent
- Good
- 8, 9
Point Rating (Scale 0-10)



HIGH SUMMER MEAN CAPABILITY CLASS

- Good
- Fair
- Poor
- Unsatisfactory
- 0, 1, 2, 3, 4, 5
Point Rating (Scale 0-10)

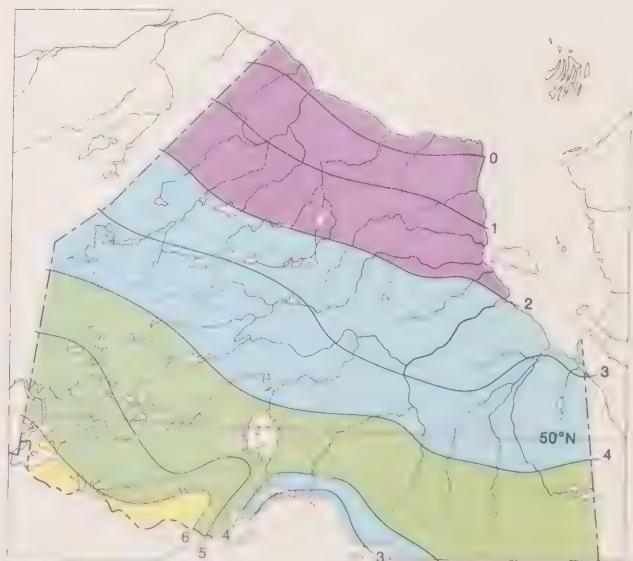


TABLE 4

SEASONAL LENGTH PATTERN FOR ONTARIO COMMUNITIES NORTH OF 50°

AND SELECTED COMPARATIVE LOCATIONS (1)

TABLE 4 Continued

Location	Main Seasonal Dates						Seasonal Length - Days							
	Complete Summer			Winter			Summer				Summer			
	1st Day Winter	Last Day Winter	1st Day Spring	1st Day High Summer	Last Day High Summer	(2) Days	Spring Shoulder	High Summer	Days Index	High Summer	Autumn Shoulder	Days Index	Complete Summer	Days Index
<u>Other Northern Ontario</u>														
Geraldton	Oct 26	Apr 28	May 13	Jun 4	Sep 5	183	80	22	58	94	75	52	78	168
Kapuskasing	Oct 21	May 6	May 21	Jun 3	Sep 2	198	87	13	34	92	73	48	72	153
Kenora	Oct 28	Apr 7	May 12	May 27	Sep 8	182	80	15	39	105	83	49	73	169
North Bay	Nov 11	Apr 15	Apr 30	May 22	Sep 17	156	68	22	58	119	94	54	80	195
Thunder Bay	Nov 9	Apr 17	May 2	Jun 4	Sep 8	160	70	33	87	97	77	61	91	191
Timmins	Oct 29	Apr 28	May 13	May 30	Sep 6	182	80	17	45	100	79	52	78	169
<u>Southern Ontario</u>														
Orillia	Nov 15	Apr 7	Apr 22	May 21	Sep 24	144	63	29	76	127	101	51	76	207
Toronto Island	Nov 30	Mar 29	Apr 13	May 21	Sep 23	120	53	38	100	126	100	67	100	231
														90

Source: Reference [4], Volume One

(1) This table excludes the two-week spring thaw period

(2) Highest value indexed to base 100

TABLE 5

PARAMETERS AND CRITERIA FOR A SUITABLE DAY

(Must be met for 5 hours between 10 am and 6 pm but not necessarily consecutive hours)

Season and Activity	Temperature °C (1)	Visibility km (1)	Cloud Cover km (1)	Wind Speed km/hr (1)	Precipitation
<u>I. All Year</u>					
Landscape Touring	-24 to 32	> 5	Not Considered	<41	Nil
<u>II. Summer</u>					
Passive Activities	>12	>1.6	<8/10	<33	Nil
Vigorous Activities	13 to 32	>3	<8/10	<33	Nil
Beaching	>20	>1.6	<7/10	<25	Nil
<u>III. Winter</u>					
Skiing	>-17	>.8	Not Considered	<25	Nil or Light Flurries
Snowmobiling	>-6	>.8	Not Considered	<25	Nil or Light Flurries

Source: Reference [4], Volume Two

(1) Limits set in the source document in degrees Fahrenheit or miles per hour have been converted to the nearest rounded Celsius or kilometer value.

TABLE 6

 LIMITS FOR
 SATISFACTION OF PARTICIPANTS IN ACTIVITIES AS A FUNCTION OF
 WEATHER FACTORS

Activity	Season	Weather Factors			
		Sunny 0-2/10	Partly Cloudy 3/10-7/10	Cloudy 8/10	Wet .25 cm
Landscape Touring	Complete Summer	100%	100%	75%	0%
Vigorous and Passive Activities	Spring and Autumn	100	75	50	0
Vigorous and Passive Activities	High Summer	75	100	50	0
Beaching	High Summer	100	50	25	0
Skiing and Snowmobiling	Winter	100	75	50	25 (snow)

Source: Reference [4], Volume Two

A wet day was defined as one having .25 cm or more of precipitation in a 24-hour period. It was assumed that all wet or snowy days were cloudy. Cloud cover conditions at 1:30 pm divided dry days into three types: sunny 0 - 2/10 cloud cover; partly cloudy 3/10 - 7/10 cloud cover; cloudy 8/10 or more cloud cover.

The percentage of those engaged in different tourist and outdoor recreation activities that are satisfied by the various weather types is shown. For example, it was considered that 100 per cent of those engaged in beaching would be satisfied with sunny weather, 50 per cent with partly cloudy and zero per cent with wet. Wet conditions were said to be unsatisfactory for all participants engaged in all activity pursuits. In the case of skiing and snowmobiling, it was considered that only about 25 per cent would be satisfied with snowfall greater than 25 cm in a 24-hour period. Heavy snowfall tends to restrict travel from urban centres to ski slopes, particularly if there is a risk of not being able to return to work at a fixed time. In addition, excessive snowfall detracts from skiing satisfaction for many. [4]

In the second step, indices of climatic satisfaction were developed for the individual activities and activity groupings. Here the index is a function of two or more factors that are considered relevant. For example, it was felt that the indices for beaching, vigorous and passive outdoor activities, landscape touring and snowmobiling are dependent upon weather and comfort satisfaction.

In the final step, seasonal ratings and quality classes were prepared for activities and activity groupings. The quality ratings for the five summer activities (landscape touring, vigorous and passive outdoor recreation activities, beaching, and swimming) and those for the two winter activities (skiing and snowmobiling) were summated. The results were presented on a rating scale (0 to 10) and a descriptive quality class basis as shown in Table 7.

TABLE 7
SEASONAL RATINGS AND CLASSES

<u>Seasonal Ratings</u>	<u>Seasonal Quality Classes</u>	
10	Excellent	(E)
9		
8		
7	Good	(G)
6		
5	Fair	(F)
4		
3	Poor	(P)
2		
1	Unsatisfactory	(U)
0		

Source: Reference [4], Volumes Two and Three

The discussion that follows is centered around the results of the final step of the work as they relate to centres in Ontario North of 50° and comparative points in other parts of the province. From Table 8 the strength of winter in Ontario North of 50° in terms of quality for tourism and outdoor recreation is immediately apparent. The point rating index on a scale of 0 to 10 ranges from 8.0 to 9.5 and the area is uniformly classed as excellent. The study area is clearly superior to southern Ontario and adjacent northerly outdoor tourist and recreation areas as exemplified by the values for Orillia (index 6.0 - class good).

The combined length and strength of the season are illustrated in Table 9 showing the period of reliable snow cover, together with the sum of the daily quality index values. The latter combine snow cover reliability with comfort and weather satisfaction, thereby providing a comprehensive measure of quality.

At locations North of 50° the strength of the reliable snow cover period is obvious. Values range from 106 days at Sioux Lookout, a point typical of the more southerly locations in the study area, to a high of 152 days at Winisk. Many of the more southerly points in northern Ontario that have winter resort operations display much less strength in terms of the important snow cover characteristic: North Bay - 95 days, index 62; Thunder Bay - 85 days, index 56; and Kenora - 97 days, index 64. The comparative weakness of resort areas in southern Ontario also is clearly evident: Orillia - 51 days, index 33; Huntsville - 77 days, index 51; and Collingwood - 38 days, index 25.

In terms of the summated values for the daily index of overall climatic satisfaction for snowmobiling shown in Table 9, the strongest values are associated with the more southerly portions of Ontario North of 50° and the Boreal and Great Lakes Forest Regions as far south as Huntsville. Assigning an index value of 100 to Timmins, the location displaying the highest accumulated index (6148), the comparative situation becomes immediately apparent. The far northern parts of the study area are only 75 per cent as strong due to the depressing impact of shorter daylight hours, cold temperatures and high windspeeds prevalent in the area during a portion of the reliable snow cover period. In effect, winter is "too strong" over a part of this season.

In Table 10 the indices of climatic satisfaction for snowmobiling are shown for locations North of 50° by 10-day periods from October to May. By mid-November values are 50 and above for far northern locations and by late November they prevail across all the study area. They persist until the end of March and until mid-April in far northern locations such as Winisk.

From Table 11 it will be seen that highest index values for skiing and snowmobiling compare favourably with those for commercial locations in other parts of Ontario enjoying a winter tourist and outdoor recreation economy. The time of occurrence of the best conditions is early March to early April, beginning about two weeks earlier in the southern parts of Ontario North of 50° and lasting two weeks longer in the more northerly areas such as Winisk and Big Trout Lake. It is important to note that in southern Ontario the season is over at this period or well past its prime. In effect, Ontario North of 50° has the Easter/spring season market to itself insofar as competition from points in eastern North America is concerned.

From Table 8, the weakness of the summer season is clear. In high summer, which represents the central core of tourist operations in that it is associated with vacation periods and the greatest intensity and variety of activity pursuits, the quality classes range from fair to poor. There is no high summer at Winisk. The point ratings, representing accumulated satisfaction indices for all summer activities combined and transformed into a scale from 0 to 10, are very weak.

Values range from a low of 2.2 at Big Trout Lake and Fort Albany to 5.0 at Red Lake. Compared with Niagara-on-the-Lake, the most favourable location in southern Ontario, the quality of the high summer North of 50° is only 55 to 24 per cent as strong from its best southern locations to its least favourable northern. Conditions for the complete summer North of 50° are only marginally better than those of high summer. The quality classes are identical but the point ratings are slightly better in both an absolute and comparative sense.

In Table 12 the mean complete and high summer ratings and classes by activities and activity groupings are shown for areas North of 50°. Swimming and beaching, two summer outdoor activities, are essentially precluded with ratings on a scale of 0 to 10 ranging from 0 to 3 and the quality classes from unsatisfactory to poor. Climatic conditions for vigorous and passive outdoor recreation activities that include angling, hunting, and wilderness canoeing, boating and hiking are not generally attractive during the complete or high summer season. On a scale from 0 to 10, quality ratings for the high summer range from 1 to 6 and quality classes from unsatisfactory to fair. Due to somewhat more satisfactory fall conditions, the ratings for the complete summer are marginally better varying from 3 to 6 and classes from poor to good in the Albany West area. It is clear that environmental attributes other than climate must be present to support tourism development. Stated in another fashion, many important traditional summer activities of North Americans are virtually precluded by climatic constraints and hunting, fishing and wilderness travel potentials must be sufficiently strong to offset the climatic limitations. Fortunately that appears to be the case.

TABLE 8

 MEAN WINTER AND SUMMER SEASONAL
 CLASSES FOR ONTARIO COMMUNITIES
 NORTH OF 50° AND SELECTED COMPARATIVE LOCATIONS

LOCATION	Winter Season				Summer Season					
	Rating		Class	High Summer				Complete Summer		
				Rating		Class	Rating		Class	
	Pts	Index		Pts	Index		Pts	Index		
North of 50°										
Armstrong	9.5	100	Excellent	4.2	47	Fair	4.6	51	Fair	
Big Trout Lake	8.0	84	Excellent	2.2	24	Poor	3.0	33	Poor	
Fort Albany	8.0	84	Excellent	2.2	24	Poor	3.0	33	Poor	
Lansdowne House	9.0	95	Excellent	3.2	35	Poor	3.8	42	Poor	
Mammamattawa	9.0	95	Excellent	3.8	42	Poor	4.0	44	Poor	
Moosonee	8.5	89	Excellent	3.0	33	Poor	3.8	42	Poor	
Pickle Lake	9.5	100	Excellent	3.8	42	Poor	4.4	49	Poor	
Red Lake	8.5	89	Excellent	5.0	55	Fair	5.2	58	Fair	
Sioux Lookout	8.5	89	Excellent	4.6	51	Fair	5.0	55	Fair	
Winisk	8.0	84	Excellent	NO HIGH SUMMER				2.4	27	Poor
Other Northern Ontario										
Geraldton	9.5	100	Excellent	4.6	51	Fair	5.0	55	Fair	
Kapuskasing	9.0	95	Excellent	4.0	44	Fair	4.4	49	Fair	
Kenora	8.5	89	Excellent	5.8	64	Fair	6.0	67	Good	
North Bay	9.0	95	Excellent	6.8	75	Good	6.6	73	Good	
Thunder Bay	8.5	89	Excellent	4.8	53	Fair	5.6	62	Fair	
Timmins	9.5	100	Excellent	5.0	55	Fair	5.0	55	Fair	
Southern Ontario										
Niagara-on-the-Lake	.0	-	Unsuitable	9.0	100	Excellent	9.0	100	Excellent	
Orillia	6.0	63	Good	7.8	86	Good	7.8	87	Good	
Trenton	4.0	42	Fair	8.2	91	Excellent	8.6	95	Excellent	

Source: Reference [4], Volumes Two and Three

TABLE 9

SELECTED WINTER QUALITY MEASURES

LOCATION	1st Day of Winter	Reliable Snow Cover			Sum of Daily Index Values For Snowmobiling	
		1st Day	Total Days	Index	Total	Index
<u>North of 50°</u>						
Armstrong	Oct 24	Nov 27	110	72	5964	96
Big Trout Lake	Oct 16	Nov 13	135	89	4688	76
Fort Albany	Oct 22	Nov 24	119	78	4952	80
Lansdowne House	Dec 19	Nov 17	125	82	5599	91
Mammamattawa	Oct 26	Nov 25	115	76	5470	89
Moosonee	Oct 25	Nov 26	115	76	5170	84
Pickle Lake	Oct 22	Nov 21	119	78	5757	94
Red Lake	Oct 24	Nov 26	107	70	5340	87
Sioux Lookout	Oct 23	Nov 27	106	70	5117	83
Winisk	Oct 8	Nov 9	152	100	4634	75
<u>Other Northern Ontario</u>						
Geraldton	Oct 28	Nov 29	108	71	5821	95
Kapuskasing	Oct 21	Nov 27	112	74	5871	91
Kenora	Oct 28	Dec 2	97	64	5072	82
North Bay	Nov 11	Dec 11	95	62	6008	98
Thunder Bay	Nov 9	Dec 12	85	56	5686	92
Timmins	Oct 29	Dec 1	106	70	6148	100
<u>Southern Ontario</u>						
Collingwood	Nov 16	Jan 11	38	25	3940	64
Huntsville	Nov 9	Dec 15	77	51	5486	89
Orillia	Nov 15	Jan 2	51	33	4211	68

Source: Reference [4], Volume Three

TABLE 10
 INDICES OF CLIMATIC SATISFACTION FOR SNOWMOBILING IN
 ONTARIO NORTH OF 50°
 BY TEN-DAY PERIODS

LOCATION	OCT			NOV			DEC			JAN			FEB			MAR			APR			MAY		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Armstrong	5	16	42	54	61	64	63	65	63	65	70	70	76	73	68	49	30	12	2	1				
Big Trout Lake	4	13	28	59	61	57	47	41	37	36	38	43	53	63	72	75	69	50	23	13	6	2		
Fort Albany	7	17	41	55	63	60	56	51	49	51	59	62	69	72	70	58	41	27	15	9	3			
Lansdowne House	1	8	23	54	58	64	60	53	52	50	51	60	67	72	78	74	61	41	19	9	4	1		
Mammatawawa	1	7	14	37	50	63	60	59	58	55	59	68	71	72	74	69	55	33	14	6	2	1		
Moosonee	7	14	39	53	65	62	59	59	53	57	61	66	70	71	68	53	35	21	10	4	2			
Pickle Lake	9	24	47	57	65	60	59	59	58	59	65	70	73	76	71	56	36	15	4	1				
Red Lake	5	15	39	55	62	62	61	61	60	61	68	72	75	75	60	43	25	8	2	1				
Sioux Lookout	5	13	36	52	58	63	58	62	62	62	65	70	74	68	53	43	22	7	1					
Winisk	1	2	9	22	57	64	57	46	38	33	30	29	37	36	43	54	64	69	75	67	44	23	7	2

TABLE 11

HIGHEST CLIMATIC SATISFACTION INDICES FOR
 SKIING AND SNOWMOBILING AND THEIR TIME
 OF OCCURRENCE

LOCATION	Range of Highest Indices For		Time of Occurrence Of Highest Indices For Skiing and Snowmobiling
	Skiing	Snowmobiling	
<u>North of 50°</u>			
Hudson Bay Shore	49-52	74-75	Late March to Early April
Patricia	47-54	71-76	Mid to Late March
Albany East	47-56	71-76	Early to Mid March
Albany West	53-57	74-78	Early to Mid March
<u>Other Northern Ontario</u>			
Thunder Bay	60-62	75-76	Late Feb
Height of Land East	55-72	74-78	Late Feb to Early March
Height of Land West	52-58	74-77	Late Feb to Early March
<u>Southern Ontario</u>			
Muskoka	50-59	67-69	Mid to Late Feb
Haliburton East	45-63	63-73	Mid to Late Feb
Southern Georgian Bay	52-57	63-67	Mid Feb

Source: Reference [4], Volume Three

TABLE 12

SEASONAL POINT RATINGS AND QUALITY CLASSES BY ACTIVITY PURSUITS FOR
ONTARIO NORTH OF 50°

20

		Swimming		Beaching		Vigorous Activities		Passive Activities		Landscape Touring		Combined	
	Rate	Class	Rate	Class	Rate	Class	Rate	Class	Rate	Class	Rate	Class	Rate
<u>Complete Summer</u>													
Hudson Bay Shore	0	U	0	U	3	P	3	P	6	G	2-3	P	
Patricia	0	U	0-1	U	3-5	P-F	3-4	P-F	6	G	2-4	P-F	
Albany East	0-1	U	1-3	U-P	4-5	F	4-5	F	6-7	G	3-4	P-F	
Albany West	1	U	2-3	P	5-6	F-G	4-6	F-G	6-7	G	3-5	P-F	
<u>High Summer</u>													
Hudson Bay Shore							No	High Summer					
Patricia	0	U	0-1	U	1-3	U-P	1-3	U-P	0-4	U-F	2-3	P	
Albany East	0-1	U	1-3	U-P	3-5	P-F	3-4	P-F	4-6	F-G	3-4	P-F	
Albany West	1	U	2-3	P	4-6	F-G	3-5	P-F	4-6	F-G	3-4	P-F	

Source: Reference [4], Volume Two

U = Unsatisfactory
P = Poor
F = Fair
G = Good
E = Excellent

MAJOR IMPLICATIONS FOR TOURISM PLANNING, DEVELOPMENT AND OPERATION

The significant implications of climate noted subsequently must be clearly recognized and accommodated in all phases of decision-making related to tourism program and facility investment planning, development and operations by government and the private sector. No other single component of the natural supply foundations exerts such a widespread fundamental impact. Moreover, climate is a critical determinant of user satisfaction for many specific activity pursuits. For public and private enterprises to ignore the effects of climate is to court financial disaster and the cruel destruction of employment and income aspirations in an environment that is now severely restricted in this regard.

FOR WINTER PROGRAM AND FACILITY DEVELOPMENT

The introduction of tourist programs and facilities to exploit the opportunities of the longest and strongest climate season is essential for the development of a strong and dynamic industry capable of making its maximum impacts on the economic structure of Ontario North of 50°. Without winter tourism, the contribution of the sector to investment, employment and income will remain noticeably limited.

FOR SUMMER PROGRAM AND FACILITY DEVELOPMENT

Climatic patterns severely restrict the type and scale of viable investment opportunities in Ontario North of 50° in the following manner:

Large-scale, multi-faceted commercial resort operations essentially focused on beaching, swimming, pleasure boating, golf, tennis and similar outdoor pursuits are generally precluded from Ontario North of 50° by climatic constraints.

While angling and hunting sport camp and wilderness adventure travel development potentials are of sufficient strength to reduce climatic limitations to secondary or minor status, constraints or limitations are imposed in two respects. First, the transition of outpost camps and lodges North of 50° to multiple activity resort developments, as occurred in many places in southern Ontario when their remote fly-in characteristics were destroyed by unrestricted road access, is unlikely. Secondly, new lodge developments north of the seventh and eleventh baselines will be restricted essentially to sport camp activities. While new lodge complexes in this area may offer a wide range of indoor support facilities, possibly even small conference and business meeting rooms, climatic conditions will be minimal to unsatisfactory for beaching, swimming and passive outdoor recreation activities. Investment decision-making must recognize and accommodate these limitations.

FOR NATURAL ENVIRONMENTAL SUPPLY FOUNDATIONS

Climate imposes a powerful impact on the productivity and resilience of the various elements of the natural environmental supply foundations for tourism including wildlife, fish and general terrain attractivity. Compared with the southern part of the province, the environment can support only relatively low levels of fish and wildlife harvesting and recreation activity pursuits if the attractivity of the natural resource foundations is to be sustained. High intensity harvesting and terrain use will quickly and inevitably result in destruction of natural capabilities, sometimes requiring a century or more for recovery.

FOR FUTURE RESEARCH

Seasonal length and quality can deviate considerably from the average (or mean) in any given year. Fortunately for the main tourist operations in Ontario North of 50° , factors such as angling quality, hunting potential and wilderness impact are more important than weather variability. Moreover, they involve relatively unchangeable travel commitments, requiring planning and booking several months in advance. However, in the case of those tourist facilities and services where the customer has considerable latitude for delayed or last minute decision-making (for example, motel accommodation or camping), weather variability can be an important factor. Two or three years of poor weather can virtually wipe out a tourist operation relying on mean climatic conditions to meet financial commitments. Those involved with development of tourist operations require information regarding the probability that climatic conditions will be close to the mean, particularly in the critical opening years when the debt load is high and there is an urgent need for sales to generate a high cash inflow.

ISSUES

There are no issues associated with climate in relation to tourism development in Ontario North of 50°. It is noted, however, that climate is a fundamental dimension of the broader issue of realistic assessment of overall environmental supply strengths and limitations.

SUPPORT DOCUMENTATION

RELATED AGENCIES, PROGRAMS AND INFORMATION OUTPUT

The Atmospheric Environment Service (AES), Canada Department of the Environment offers access to a general climatic data base for numerous weather stations in Ontario North of 50° and specialized consultation services in applied tourism and outdoor recreation climatology. Contact can be made with the regional office of AES in central Toronto or the headquarters office at Downsview as noted later.

The long-term abstracts of climatic normals for various elements (temperature, snowfall, sunshine hours, etc.) are now available for examination in microfiche or can be ordered in printed form upon request.[5] The fiche records now contain measures of variability for the mean values including standard deviations and percentile tables for 5, 25, 50, 75 and 95 per cent of the observations. Both the standard deviation and percentile tables have important applied value in tourism planning, development and operation. From the latter information the percentage of the observations above and below the mean can be determined. In effect a form of probability statement has been prepared.

Tourism interests should exert their influence to ensure that planners use the available probability information base where appropriate and that the Atmospheric Environment Service incorporates this aspect into all future applied climatology studies related to tourism and outdoor recreation in Ontario North of 50°.

The Meteorological Applications Branch of AES at Downsview has developed a small expert tourism and outdoor recreation climate group that has undertaken numerous regional and national park climate studies over the past 13 years. The group is available for consultation and will execute research on a user-pay basis. In addition, the regional offices of AES in downtown Toronto have been involved in the tourism and outdoor recreation field of applied climatology at various times. The contact points are:

Outdoor Recreation Group
Meteorological Applications Branch
Atmospheric Environment Service
Canada Department of the Environment
4905 Dufferin Street
Downsview, Ontario M3H 5T4
(416) 667-4907

Ontario Regional Headquarters
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CONTACTS MADE IN COURSE OF STUDY

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